

# **Essays on State Actors, Civil Society Groups, and International Institutions in Global Environmental Governance**

Cumulative Habilitation by

**Dr. Tobias Böhmelt**

Born on 23 November 1982 in Bamberg (Bavaria)

Submitted to the

**Swiss Federal Institute of Technology, Zürich**

In Partial Satisfaction of the Requirements for the *venia legendi* in Political Science

October 2012



## Author's Note and Acknowledgments

The following habilitation has been written in the context of the *Swiss National Research Program on Democracy in the 21<sup>st</sup> Century*. Its completion took a significant amount of my time and I am indebted to more people than I can possibly list here. Nevertheless, I particularly want to thank Thomas Bernauer and Vally Koubi. Without their expertise, helpful comments, and support I could not have done this. Both of them also co-authored some of the habilitation's chapters with me. Furthermore, Michael Bechtel, Rob Franzese, Tina Freyburg, Helen Milner, MJ Peterson, Ulrich Pilster, Lena Schaffer, Gabriele Spilker, and Jürg Vollenweider gave insightful comments that helped to improve the manuscript. I also thank Jan Burck for sharing the data of the Germanwatch Climate Change Performance Index and acknowledge support from the International Union for Conservation of Nature, Gland (Switzerland) in my data collection. Bianca Oehl, Lena Kiesewetter, and Gwen Tiernan provided excellent research assistance. Finally, with regard to those papers that have already been accepted for publication in journal outlets, I thank the anonymous reviewers and the journals' editors for their feedback and encouragement.

Supplemental material, the dataset, and the replication files referred to in the manuscript can be obtained from me upon request. All possibly remaining errors and faults are my own.

Zürich, October 2012

Tobias Böhmelt



## List of Figures

1.1	Civil Society on States' National Delegations at the UNFCCC CoPs, 1995–2011.....	14
2.1	The Evolution of the CLRTAP Network, 1980–2008.....	27
2.2	The Conditional Impact of the CLRTAP Network Measures.....	41
2.3	The Impact of the CLRTAP Network Measures – 4–Fold Cross–Validation Quasi– Experimental Setup.....	44
3.1	Median Band with 'Top–5' Countries of Civil Society Participation at the UNFCCC, 1995–2004.....	59
3.2	Histograms of <i>Civil Society Participation</i> and <i>Civil Society Actors</i> .....	61
4.1	Interaction Effect of Network Centrality and Civil Society – Dyadic Counterpart.....	97
4.2	In–Sample Prediction.....	99
4.3	Out–of–Sample Prediction.....	100
4.4	Survey Results.....	103
5.1	Expected Effects of ENGOs on Treaty Ratification in Democracies.....	113
5.2	Effect of ENGO Leverage on Treaty Ratification, Conditional on Democracy.....	123
5.3	Estimates of Survival Functions, According to ENGO Leverage and Regime Type.....	125
6.1	Conditional Marginal Effect of <i>ENGO Access</i> on <i>Depth of Cooperation</i> .....	149
7.1	Components of the CCPI.....	156
7.2	C3–I Country Coverage, 1996–2008.....	159
7.3	C3–I Median Band with Three Best and Worst Performing Countries, 1996–2008.....	161
7.4	Relationship between the CCPI and the C3–I.....	163
7.5	Effect of Democracy on Climate Policy – The CCPI and the C3–I in Comparison.....	166
7.6	Emission Components of the CCPI and the C3–I in Comparison.....	169
7.7	Policy Components of the CCPI and the C3–I in Comparison.....	170
8.1	Matching: Balance Statistics.....	185
8.2	Matching: Balance Statistics.....	185
8.3	Matching: Balance Statistics.....	186



## List of Tables

2.1	Descriptive Statistics.....	37
2.2	The Effectiveness of the CLRTAP Network.....	39
2.3	The Conditional Impact of Network Measures for CLRTAP Effectiveness.....	40
3.1	Basic Information of Variables.....	65
3.2	Civil Society Participation in UNFCCC National Delegations, 1995–2004.....	67
3.3	Civil Society Participation in UNFCCC Delegations: Predicted Probabilities.....	68
3.4	The Number of Civil Society Actors in UNFCCC National Delegations, 1995–2004.....	70
3.5	Environment vs. Business Lobbying Groups in UNFCCC Delegations, 1995–2004.....	74
4.1	Descriptive Statistics.....	95
4.2	Main Results.....	96
5.1	Results from Cox Proportional Hazards Models.....	122
6.1	Environmental Regimes in Data Set.....	139
6.2	The <i>Depth of Cooperation</i> .....	142
6.3	Descriptive Statistics.....	146
6.4	The Impact of ENGOs on Environmental Commitment Levels.....	147
7.1	Policy Components of the CI (C3–I).....	157
7.2	Descriptive Statistics for the CCPI and the C3–I.....	163
7.3	Effect of Democracy on Climate Policy Performance – The CCPI and the C3–I in Comparison.....	165
7.4	Descriptive Statistics for the CCPI and the C3–I Emission Components.....	168
7.5	Descriptive Statistics for the CCPI and the C3–I Climate Policy Components.....	170
7.6	Summary Comparison of CCPI and C3–I.....	172
8.1	Variation Inflation Factors of Explanatory Variables.....	183
8.2	The Influence of Civil Society Lobbying on Countries’ Climate Change Policy.....	187





## Table of Contents

1	Introduction.....	13
2	Information Flows and Social Capital through Linkages: The Effectiveness of the CLRTAP Network.....	23
2.1	Introduction.....	23
2.2	International Environmental Regimes and Social Networks – Reduced Uncertainty, Social Capital, and more Effective Institutions.....	26
2.3	Centrality in the CLRTAP Network – A Conditional Effect.....	30
2.4	Research Design.....	32
2.4.1	Data.....	32
2.4.2	Operationalization – Dependent Variable and Core Explanatory Items.....	33
2.4.3	Operationalization – Control Variables.....	36
2.5	Empirical Findings – Fixed Effects Regression Models.....	38
2.6	Empirical Findings – 4–Fold Cross–Validation Quasi–Experimental Setup.....	43
2.7	Sensitivity and Robustness Checks.....	45
2.8	Conclusion.....	46
3	A Closer Look at the Information Provision Rationale: Civil Society Participation in States’ Delegations at the UNFCCC.....	49
3.1	Introduction.....	49
3.2	Disaggregating the Information Provision Mechanism: Theoretical Expectations.....	54
3.2.1	Bureaucratic Quality.....	54
3.2.2	Negotiation Issue Salience.....	55
3.2.3	Regime Type.....	56
3.3	Research Design.....	58
3.3.1	Data.....	58
3.3.2	Dependent Variables and Methodology.....	61
3.3.3	Explanatory Variables and Control Items.....	62
3.4	Empirical Core Findings.....	66
3.5	Extending the Scope: ENGOs vs. Business Lobbying Groups.....	71
3.6	Conclusion.....	75
4	Civil Society Inclusion in Global Governance: Insights from Climate Politics.....	79
4.1	Introduction.....	79
4.2	Social Networks, Legitimacy, and Civil Society Inclusion: Theoretical Argument.....	83
4.2.1	Social Networks: The Importance of Ties.....	83
4.2.2	Legitimacy Promoting Effects of Civil Society Involvement.....	86
4.2.3	Network Centrality and Civil Society Inclusion.....	89
4.3	Research Design.....	91
4.4	Empirical Results.....	95
4.4.1	Principle Findings.....	95
4.4.2	Extending the Scope: In–Sample and Out–of–Sample Predictions.....	98
4.4.3	Robustness Checks.....	101
4.4.4	Survey Results.....	102

4.5	Conclusion.....	104
5.	Is There a Democracy–Civil Society Paradox in Global Environmental Governance?.....	107
5.1	Introduction.....	107
5.2	Determinants of IEA Ratification.....	109
5.3	ENGOS, Democracy, and the Ratification of IEAs.....	112
5.3.1	Public Demand for Environmental Protection.....	112
5.3.2	Government Incentives to Meet Public Demand.....	114
5.3.3	Problems of Collective Action in Democracies.....	115
5.4	Research Design.....	117
5.4.1	Dependent Variable and Methodology.....	117
5.4.2	Explanatory Variables.....	119
5.5	Empirical Findings.....	121
5.6	Conclusion.....	125
6	The Impact of Environmental Interest Groups in International Negotiations: Do ENGOS Induce Stronger Environmental Agreements?.....	129
6.1	Introduction.....	129
6.2	The Influence of ENGOS in Global Environmental Governance.....	132
6.2.1	Do ENGOS Matter in International Environmental Politics?.....	132
6.2.2	Does a Higher Degree of ENGO Access Imply Better Outcomes?.....	134
6.2.3	Does a Larger Number of ENGOS Imply Better Outcomes?.....	135
6.2.4	Does the Combination of Access and Number of ENGOS Imply Better Outcomes?.....	137
6.3	Research Design.....	138
6.3.1	Data.....	138
6.3.2	Dependent Variable and Methodology.....	140
6.3.3	Explanatory Variables.....	142
6.3.4	Control Variables.....	144
6.4	Empirical Findings.....	146
6.5	Conclusion.....	150
7	National Climate Policies in International Comparison.....	153
7.1	Introduction.....	153
7.2	Conceptual Differences between the CCPI and the CI.....	155
7.3	The Climate Change Cooperation Index (C3–I).....	158
7.4	Empirical Comparison of the CCPI and the C3–I.....	162
7.4.1	Descriptive Comparison.....	162
7.4.2	Are Democracies more ‘Climate Friendly?’ A Simple Model Comparison.....	164
7.4.3	Disaggregating the Two Indices – A Comparison of Outcome and Output Components.....	168
7.5	Conclusion.....	171
8	Civil Society Lobbying and Countries’ Cooperation in Climate Change Policy – A Matching Approach.....	173
8.1	Introduction.....	173
8.2	The Influence of Civil Society in International Environmental Policy – Theoretical Background.....	176
8.3	Selection Effects and the Causal Impact of Civil Society Lobbying in Negotiation Delegations – Persistent Challenges in Current Research.....	177
8.4	Research Design.....	179
8.4.1	Methodology: Genetic 1:1 Matching with Replacement.....	179
8.4.2	Dependent Variable.....	180
8.4.3	Treatments and Confounding Factors.....	181
8.5	Empirical Findings.....	183
8.6	Conclusion.....	189
9	Final Remarks: Discussion and Conclusion.....	191

9.1	Academic Contribution and Policy Implications.....	193
9.2	Avenues for Further Research.....	197
	Bibliography.....	201

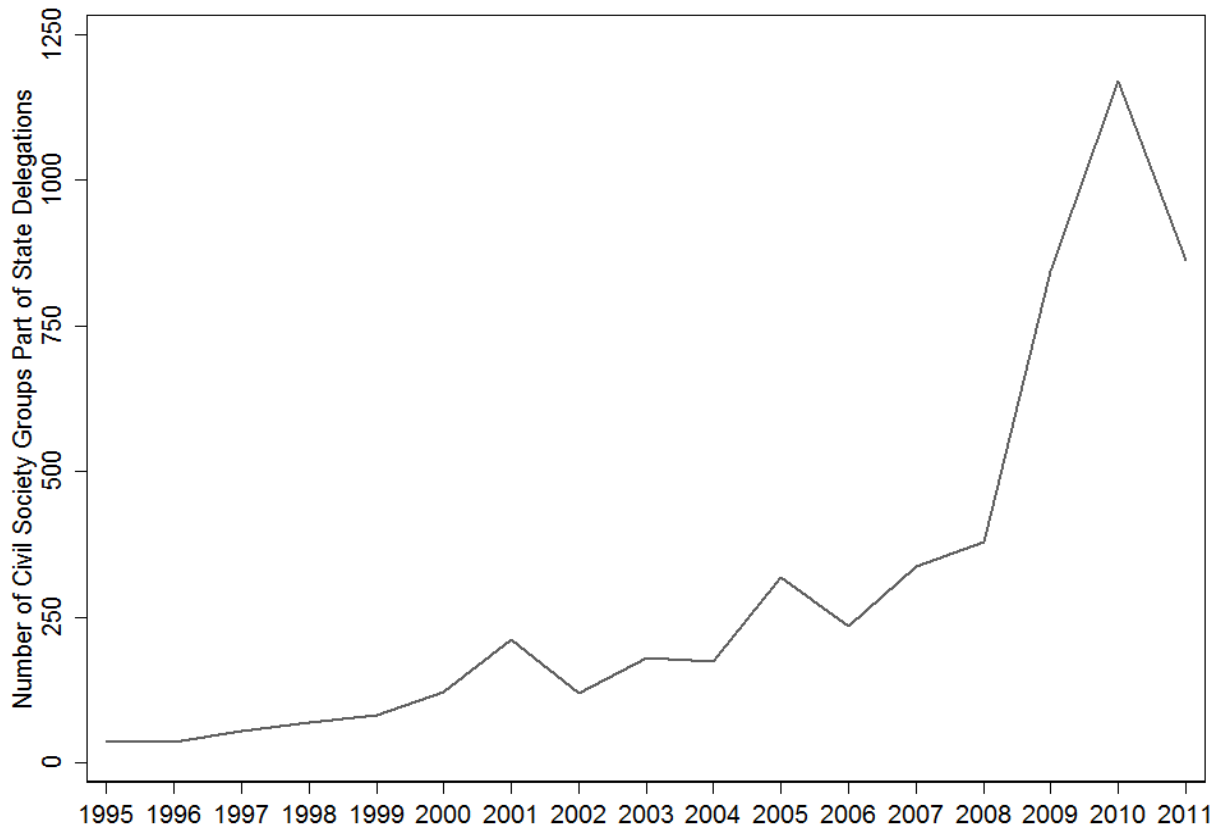


# 1 Introduction

International politics and decision-making remain primarily an inter-governmental affair (Keane 2003). It is generally seen that the Treaty of Westphalia established a legal system (Dryzek 2012), in which states as sovereign actors have been and still are the decisive players that make decisions both at the domestic and international level and are ultimately responsible for these decisions regardless of the policy issue one might be interested in. However, the last decades have witnessed a decline of the state monopoly in these fora and a simultaneous increase both in the involvement of civil society organizations (CSOs) in domestic as well as global governance and in their interaction with official actors (e.g., Risse-Kappen 1994; 1995; Weiss and Gordenker 1996; Charnovitz 1997; Clark, Friedman, and Hochstetler 1998; Keck and Sikkink 1998; Dryzek 2012; see also Raustiala 1997; 2001; Newell 2000; Betsill and Correll 2001; 2008; Gulbrandsen and Andresen 2004; Arts 2005). Following Steffek and Nanz (2007; see also Castiglione 1998; Keck and Sikkink 1998), civil society is defined as all those actors and groups that pursue interests in domestic or global governance, but do not belong to or are affiliated with official governmental entities. As Dryzek (2012: 103) states, ‘global civil society is increasingly thought of not just as a realm of civility, but as home to a particular kind of political activity for which states may be the targets but are otherwise not full participants.’ Civil society thus pertains to research and academic institutions, labor groups, but also companies or trade-lobbying organizations, i.e., all non-governmental organizations (NGOs)<sup>1</sup> broadly defined (Edwards 2004; Betsill and Correll 2008; Albin 1999: 373; Charnovitz 1997: 186), which increasingly and actively intervene in issue areas that traditionally have been under the exclusive responsibility of states.

---

<sup>1</sup> This approach possibly employs the broadest definition by also including business associations or corporations. Also, the terms ‘non-governmental actors/organizations/groups,’ ‘non-state actors,’ and ‘civil society’ are used interchangeably in the following.



**Fig. 1.1** Civil Society on States' National Delegations at the UNFCCC CoPs, 1995–2011

Academic interest in the drivers of this development has grown accordingly, with a strong focus on policy areas such as environment and human rights, where the involvement of civil society has been particularly pronounced (e.g., Weiss and Gordenker 1996; Charnovitz 1997; Matthews 1997; Raustiala 1997; Clark et al. 1998; Betsill 2002; 2006; Scholte 2004; Dalton 2005; Omelicheva 2009; Bernauer and Betzold 2012; see also Princen 1994; Arts 2005; Bernauer et al. 2013). With regard to environmental politics, particularly climate change has long featured a very high level of civil society presence, involvement, and influence (Newell 2000; see also Dryzek 2012: 105). Non-governmental organizations turn up in massive numbers at the annual Conferences of the Parties (CoPs) to the United Nations Framework Convention on Climate Change (UNFCCC), and are often involved even in multilateral negotiations that are usually dominated by official government actors (Bäckstrand 2008). Figure 1.1 illustrates the validity of this claim via the membership of CSOs in states' delegations during the UNFCCC CoPs. Evidently, civil society involvement substantially increased over 1995–2011, hence providing a

stylized fact for the notions from above that in this case civil society groups increasingly seek to penetrate ‘deeply into official decision–making’ (Mathews 1997: 55). While the 1<sup>st</sup> CoP in Berlin (1995) saw representatives of 28 CSOs, the last CoP in Durban (2011) saw more than 850 such actors as members of states’ delegations.

Much of the academic literature views greater civil society participation in a positive light. For instance, civil society can enhance the quality and effectiveness of policy–making by providing information, increasing fairness in procedural and outcome terms, enhancing transparency and accountability, and giving a voice to social groups that would otherwise lose out to more powerful political actors (Lipschutz 1992; Gordenker and Weiss 1995; Wapner 1996; Keck and Sikkink 1998; Dryzek 2012). In fact, civil society is widely regarded as a crucial component of democratic, equitable, and cohesive societies (Diamond 1994; White 1994; Bailer et al. 2012). As Dryzek (2012: 105) summarizes: ‘the more enthusiastic supporters of global civil society see in it possibilities not just for enhanced representation and accountability within the existing world order, but for thoroughly transforming that order in ways that would counteract its domination by large corporations, powerful states, low–visibility financial networks, and bureaucratic international organizations. Global civil society promises everything that established centers of power lack: openness, publicity, civility, inclusiveness, a broad variety of values, a potentially wide range of participants, contestation, and reflexivity.’

That being said, much of the empirical work concentrates on single case studies that hardly go beyond anecdotal evidence, and simply enumerating cases like these is no proof of their positive influence or effectiveness (Dryzek 2012: 106ff). We thus lack systematic empirical evidence for these impacts of CSOs that thoroughly demonstrates whether they are able to influence and affect politics or not. Arguably and more importantly, if there is actually any influence, *which* interests does it serve and *how* does it affect states’ policy decisions? The following chapters seek to address these and related questions in a comprehensive fashion for the issue area of global environmental politics. Although the theoretical arguments are likely to apply to any kind of policy field in international relations or to any activity of CSOs (Keck and Sikkink 1998: 39ff), I

have chosen global environmental governance for the following reasons. First, as shown above, the involvement and participation of CSOs in this particular issue area is already widely given. As a result, the following chapters can be seen as ‘most-likely analyses’ to the extent that if we do not find any evidence for CSO influence here, it is unlikely that these actors and organizations are able to affect official actors’ policies elsewhere. Second, by restricting the analysis to one policy area, I am able to control for the impact of unit-heterogeneity at least to some extent. Finally, to the best of my knowledge, the data analyzed below are the only sources that offer comprehensive and reliable information for the theoretical concepts of interests.

In light of the crucial questions pertaining to civil society effectiveness and impact in the context of its interaction with official governmental actors, this manuscript will also try to cover an issue that may merit our attention well before we study the effect of CSOs. More specifically, when or why does this interaction occur? I define interaction here as coordinated efforts of CSOs and official actors or instances in which civil society seeks to influence official representatives. For the purpose of this research, this may include, but is not limited to, membership of civil society groups in states’ official negotiation delegations or civil society activity at (inter-) national levels that seeks to influence political decisions of states. So far, we do not know when CSOs actually seek to exert influence over governmental actors or, from a somewhat different perspective, when governments allow non-governmental organizations to have access to their bargaining delegations. These questions deserve scientific consideration especially since finding answers those questions not only helps to have a more precise understanding of civil society and its interaction with governments from an academic point of view, but is also likely to have significant policy implications. First, from a theoretical perspective, civil society is inherently linked to the state as an official actor and, therefore, the interaction between these actors seems to be one of the most important facets of civil society activity. Dryzek (2012: 104), for example, highlights that ‘civil society as a concept only makes sense when paired with a state.’ As a result, the state is ‘the guarantor for civil society, which can then take shape as a source of inputs to, interlocutor with, critic of, and supporter for the state’ (Dryzek 2012: 104; Bowden 2006).



Second, and perhaps paradoxically against the background of the first point, it does not seem necessarily plausible *ex-ante* why we observe this interaction between CSOs and official representatives at all. International negotiations primarily remain an inter-governmental affair and states keep the prerogative to determine whether non-governmental actors may participate or not. In this context, Chambers and Kopstein (2006: 378) point out that ‘global civil society still cannot do without the state and the nation state at that. The vast majority of organizations, associations, and movements that make up global civil society have their homes and headquarters in countries that offer them the protection and predictability of an established liberal legal order.’ CSOs are often denied access to policy-making processes or are only allowed to participate as observers, i.e., they are not permitted to express their positions during the negotiating process *per se* (Weiss and Gordenker 1996; Raustiala 1997; Betsill and Corell 2001: 70; Thomann 2007).<sup>2</sup> Under these circumstances, civil society is excluded, possibly from the most crucial stages of international negotiations (Thomann 2007: 78; see also Gulbrandsen and Andresen 2004: 59; Oberthür et al. 2002: 134; Steffek and Nanz 2007: 11). In other words, despite the observation that some states consider the participation of civil society, they are generally reluctant to allow non-governmental actors, e.g., access to their delegations, since these could constrain their sovereignty and also impede their position in negotiations. Thus, it is not obvious *ex-ante* why we actually observe these patterns of governmental-civil society interaction (Biermann and Gupta 2011: 1856).

Third, from a methodological perspective, an understanding of government-civil society interaction is necessary for precise causal inferences of civil society effects. Studies that examine the impact of CSOs in international negotiations largely ignore, for example, that the cases, which see civil society participation in state delegations are unlikely to be a random sample and, hence, may yield biased results about their actual influence. On one hand, we may surmise that civil society actors are more likely to be part of state delegations in negotiations that are easy to

---

<sup>2</sup> Björkbom (1999: 406) illustrates this in the case of transboundary air pollution: ‘NGO pressure in the negotiating room has [...] had but a marginal influence on the results of the negotiations. This is partly due to the fact that NGOs could only act as observers.’

conclude or are of minor importance to governments. However, it may also be the case that civil society groups first and foremost become part of delegations in the more difficult cases, i.e., negotiations that are highly salient to nation states or pose higher risks of uncertainty to them. If the first scenario applies, we may exaggerate the degree of civil society influence, while the latter may lead us to underestimate it. In other words, we need to examine the circumstances under which the interaction of civil society actors with governments occurs in the first place in order to avoid biased findings about their impact afterwards. As I will elaborate more thoroughly below, I focus on civil society officially becoming part of state delegations here.

Against this background, this manuscript contributes to these areas by addressing the listed shortcomings through the employment of diverse theoretical approaches and empirical methodologies. More specifically, in the following I will present chapters on interrelated, albeit different issues of both the onset of government–civil society interaction in global environmental politics and CSOs’ impact. To this end, I will start with a research chapter that applies a somewhat naïve perspective as it actually focuses on the effectiveness of international environmental regimes and introduces civil society influence only in a simple – as said, naïve – fashion. Hence, the second chapter examines the performance of the Convention on Long–Range Transboundary Air Pollution regime (CLRTAP) in particular from a social network perspective while taking into account the impact of environmental NGOs (ENGOS) as part of the civil society only at the margins. This approach allows me to introduce key concepts that will be employed afterwards, such as social network analysis, and also demonstrates how the previous quantitative literature has examined and tested for ENGO influence so far. Evidently, my intention is to improve on these efforts in the remainder of this manuscript. That being said, in this second chapter, it is claimed, contrary to most existing research, that we must consider all links and connections that a regime creates among its members for determining if and how it influences states toward ‘greener’ environmental behavior. To this extent, the chapter advances two arguments. First, parties more central to the CLRTAP network can rely on and signal mutual interests, shared preferences, and decreased uncertainty with all actors involved. In turn, a central

position embodies social capital, which facilitates that a well-connected state is *ceteris paribus* more likely to cooperate with the regime. Second, if other countries in the network do not cooperate, however, it is likely that the positive effect stemming from social capital disappears and that a state will defect even if it has a central position in the network. The chapter's empirical analysis provides support for the theory, and may have important implications for studies of regime effectiveness and of social networks in general. While this chapter establishes the necessary background knowledge in global environmental governance, it also demonstrates that this naïve approach is not able to find evidence that CSOs (as in this case, ENGOs) influence regime effectiveness at all. However, this seems misleading particularly due to a crude measure of civil society influence and the fact that this chapter does not take into account the decision in the first place to grant civil society access.

As a result, the third chapter goes one step back and examines a state's decision to grant CSOs access to its negotiation delegation. In more detail, the previous literature contends *inter alia* that states may welcome the participation of civil society groups in global environmental governance due to their provision of information. The research in this third chapter takes this argument as a starting point for a closer examination of its validity within the UNFCCC and, specifically, with regard to civil society involvement in states' negotiation delegations. First, I present a theoretical framework that systematically unfolds the information provision argument from a demand, i.e., state perspective along the bureaucratic quality of a country, the salience of a negotiation issue, and regime type. From this foundation, secondly, new data on the composition of states' negotiation delegations in the UNFCCC is analyzed. The results seem to indicate that the information provision mechanism is unlikely to apply in the context under study. The chapter, thus, concludes by providing alternative explanations.

Since the third chapter is therefore only able to present a 'negative finding' without being able to thoroughly prove these alternative explanations, chapter four builds upon the network approach developed in chapter 2 in order to provide a more thorough answer to when the onset of governmental-civil society interaction occurs. As stated above, states may include CSOs in their

negotiation delegations, although they face a trade-off between constraints on autonomy and increased legitimacy and knowledge resulting from the decision to grant access. The fourth chapter argues that due to uncertainty associated with this trade-off, governments may pay close attention to what others do in this respect. It is hypothesized accordingly that states, which are more central to the broader network of global governance, are more likely to be informed of and influenced by what other states do. This argument is tested with data on the participation of CSOs in national delegations to global climate negotiations (UNFCCC) in 1995–2008, complemented with an analysis of survey data collected at the UNFCCC negotiations in Durban in 2011. The results offer strong support for the hypothesized ‘contagion’ effect.

After analyzing the conditions leading to government–civil society interaction, the fifth chapter examines one aspect pertaining to the broader cluster on the effectiveness of CSOs: the impact of ENGOs as part of CSOs on ratification behavior of countries vis-à-vis international environmental agreements (IEAs). The introduction of this manuscript already elaborated that civil society is commonly assumed to have a positive effect on international cooperation. The main argument of the fifth chapter, however, focuses on a ‘democracy–civil society paradox:’ although ENGOs have a positive effect on the ratification of IEAs on average, this effect decreases with higher levels of democracy. This argument is counterintuitive and appears paradoxical because democracy is generally associated both with a more active civil society and more international cooperation. The reasons for this effect pertain to the public demand for environmental public goods provision, government incentives, and problems of collective action among ENGOs. To test the net effect of ENGOs on countries’ ratification behavior, new data on ENGOs in the time-period 1973–2006 are employed. The results offer strong support for the presumed democracy–civil society paradox.

The sixth chapter then studies ENGOs’ impact in global environmental governance more systematically as I focus here on states’ commitment levels in international environmental legalization. Although there is a substantial amount of research that studies how environmental interest groups influence international environmental negotiations, both the theoretical work and

the empirical evidence were not yet able to answer comprehensively if this makes it more likely that states, in turn, commit to stronger environmental agreements. This chapter seeks to contribute to clarifying this. First, it is argued that a higher degree of ENGO access to official negotiations and a larger number of ENGOs actively participating during bargaining processes can facilitate outcomes of environmental negotiations. I then analyze quantitative data on international environmental regimes and their members' commitment levels from 1946–1998, and obtain robust support for my claims. However, the rationale on the introduced explanatory factors also implies that the impact of ENGO access on states' commitment levels should vary conditional on the number of ENGOs actively participating. The chapter finds evidence for such an interaction, although the results go against our expectations. In fact, it seems that a similar collective action problem that is identified in chapter 5 also applies to the context of the sixth chapter.

Against this background, a shortcoming of the previously outlined chapters may be that the methodology does not fully control for the 'causal impact' of CSOs. To this end, the last two substantial chapters of this manuscript first introduce new data on states' climate policies, before I analyze CSO influence on these policies using causal inference methods. More specifically, with regard to the seventh chapter, valid and reliable measurement of countries' climate policy performance is important both for policy-making and analytical purposes. This chapter contributes to this end by introducing a new data set that offers such information for up to 172 countries for the time period 1996–2008. This *Climate Change Cooperation Index (C3–I)* captures overall performance as well as performance in terms of political behavior (output) and emissions (outcome). The C3–I thus allows for systematic global comparison of countries' climate policies. This chapter also compares the C3–I with its most relevant alternative, the *Climate Change Performance Index (CCPI)* by Germanwatch.

Finally, the substantial chapters conclude by addressing the question: is there *causal evidence* that civil society lobbying does influence states' international environmental policies? If so, does it facilitate or hamper cooperation? In one avenue for exerting such influence, as it will be

elaborated in the preceding sections of this eight chapter, ENGOs and business lobbying groups alike increasingly seek to access states' negotiation delegations at the UNFCCC in order to affect – or even change – official actors' policies. Yet, states that grant civil society access to their delegations are unlikely to be a random sample and drawing causal inferences from lobbying influence poses further methodological challenges. This chapter suggests a genetic matching approach for addressing both problems. First, matching corrects for the non-random assignment while controlling for the existence of confounding factors. Second, it pre-processes the data to form quasi-experimental contrasts by sampling a set of comparable, 'most-similar' cases that only differ in their treatment, i.e. civil society lobbying. By combining the data on states in the UNFCCC, their delegations, and their climate policy performance in 1995–2008, it is then examined which impact different civil society groups exert on states' climate change policies. While the results indicate that ENGOs are hardly influential when using causal inference methods, business lobbying groups matter – but contrary to our expectations, they enhance states' cooperation.

The last chapter summarizes the main findings of this manuscript and outlines the policy implications that may result from these. Given my results, first and foremost, it seems important to analyze the onset of government-CSO interaction and CSOs' impact in a joint fashion. That being said, the findings indicate that civil society may have a real influence in global environmental governance – although ENGOs are likely to suffer from collective action problems, which might reduce their influence, and it is instead that business lobbying groups that are decisive. While this actually goes against our initial expectations, particularly when focusing on environmental governance at the global level, it is consistent with claims stated by Olson (1965) already a couple of decades ago: only *organized* interest groups are able to exert influence and affect official actors' policy decisions. After discussing this, I finish the manuscript with a debate about possible limitations of my work and the avenues for further research in this light.

## **2 Information Flows and Social Capital through Linkages: The Effectiveness of the CLRTAP Network**

### **2.1 Introduction<sup>3</sup>**

The existing literature offers a vast amount of studies that examine whether (IEAs are effective instruments for protecting the environment or not (e.g., Bernauer 1995; Victor et al. 1998; Young 1999, 2001, 2003; Downs 2000; Helm and Sprinz 2000; Miles et al. 2002; Mitchell 2002, 2006, 2008; Hovi et al. 2003; Böhmelt and Pilster 2010; 2011; Breitmeier et al. 2011). While some scholars conclude that these kinds of international institutions are indeed effective to the extent that they successfully change countries' behavior toward the environment and, thus, address environmental problems (e.g., Levy 1993; Victor et al. 1998; Munton et al. 1999; Wættstad 2002; Bratberg et al. 2005), others hardly find evidence that IEAs improve environmental quality beyond what could have been achieved without them (e.g., Murdoch et al. 1997; Finus and Tjøtta 2003; Ringquist and Kostadinova 2005; Aakvik and Tjøtta 2011). Although all these scholars employ a variety of theoretical frameworks and empirical methodologies to study the effectiveness of IEAs, their approaches remain limited due to the assumption that IEAs affect state behavior independently or conditioned on exogenous variables, e.g., environmental or economic predictors.

As a recent exception to these studies, Ward (2006) argues that this research ignores the ties and linkages that IEAs establish between the actors involved therein. Put differently, the previous work generally examines regimes in an isolated fashion, although the overall effect of the system of regimes might be more relevant (see also Alter and Meunier 2009). By focusing on the application of social network analysis, Ward (2006) claims that IEAs establish connections

---

<sup>3</sup> The following chapter is based upon an article that I co-authored with Jürg Vollenweider. Therefore, I use the first-person plural throughout this chapter. At the time of submitting the habilitation, this chapter has been under review at an international peer-reviewed journal.

among their members. This stems from a shared institutional architecture, the fact that IEAs deal with different aspects of the same problem, i.e., environmental degradation, and because they are subject to coordination attempts across issues by groups of nations, NGOs, and international agencies. Thus, we must consider all links and connections that IEAs create among their member states for determining if and how they influence them toward ‘greener’ environmental behavior.

This chapter takes Ward’s (2006) research as a motivation to examine the effectiveness of the Convention on Long–Range Transboundary Air Pollution (CLRTAP), i.e., a sequence of nine regimes, from a social network perspective, while controlling for the influence of ENGOs. The CLRTAP is among the most comprehensive systems of IEAs and is widely regarded as a particularly sophisticated attempt to solve environmental problems at the international level (Lidskog and Sundqvist 2002). Combining voluntariness and increasing specification of regime targets, it entails ‘textbook features’ of international environmental regimes. It, hence, serves as an ideal case to study the effectiveness of a regime network (see also Ringquist and Kostadinova 2005) and the role of ENGOs therein – from an admittedly naïve perspective, though.

To this end, this chapter contributes to the previous literature in a twofold sense. First, in consistence with Ward (2006), we contend that parties more central to the CLRTAP network can rely on and signal mutual interests, shared preferences, and decreased uncertainty between all actors involved. In turn, a central position embodies social capital, which facilitates that a well–connected state is *ceteris paribus* more likely to cooperate with the regime. We depart from and, therefore, extend Ward’s (2006: 154f) approach empirically, however. Instead of employing data that are purely cross–sectional and focusing on the effects of ties in general (environmental) networks, we pursue more of a ‘micro–level’ analysis by concentrating on the CLRTAP only, and by disaggregating this institution along its nine regimes and over time. As a result, we analyze more nuanced time–series cross–section data on network ties as created by this particular IEA. This strategy may actually not overestimate the impact of the international (environmental regime) network, since our setup constitutes a ‘most–likely case’ (Lidskog and Sundqvist 2002: 86): if we do not obtain empirical support for Ward’s (2006) argument in our study of the



CLRTAP network, it seems unlikely that his theory can be applied generally. Nuanced time series and the shared institutional configuration of the CLRTAP, furthermore, facilitate to control for regime endogeneity, i.e., self-selection into IEAs by countries that would comply with regime targets even in absence of the regime. Finally, our approach also allows us to control for temporal dynamics that are likely to be crucial in the field of environmental politics. Consequently, these strategies intend to circumvent the empirical limitations in Ward's (2006) pioneering study.

A second contribution of our research is of theoretical nature. Ward (2006) argues that a higher degree of state centrality leads to the more effective provision of information through the network and more social capital, which furthers cooperation. We claim, however, that it is likely that the positive effect stemming from social capital disappears and that a state will defect even if it has a central position in the network if other countries in the network do not cooperate. Thus, we contest the reduction of uncertainty and the associated role of social capital in regime networks to some extent. While we agree that regime networks can decrease uncertainty and, thereby, increase social capital as knowledge is an important part of it, we believe that this is only one factor among a number of others through which IEAs work (Lidskog and Sundqvist 2002: 83). States operate also (at least to some extent) according to a cost-benefit model (Young 1999) and act strategically (Barrett 1994). Given the decrease of uncertainty due to a central position in the regime network, states might cooperate *or* defect, depending on the behavior of the other states in the network. Hence, the impact of a more central state position in a network may actually induce two very opposing outcomes.

The remainder of the chapter proceeds as follows. We first review the relevant argument in Ward (2006). Afterwards, we develop our theoretical rationale combining environmental regime effectiveness, social networks, information flows, and social capital with strategic reactions to the behavior of other countries. The subsequent sections detail the research design and the empirical test of the theory. The latter using social network data for the CLRTAP relies on regular quantitative methods as well as a 4-fold cross-validation quasi-experimental setup. Here, we obtain robust support for our theory. The chapter concludes with a comprehensive discussion

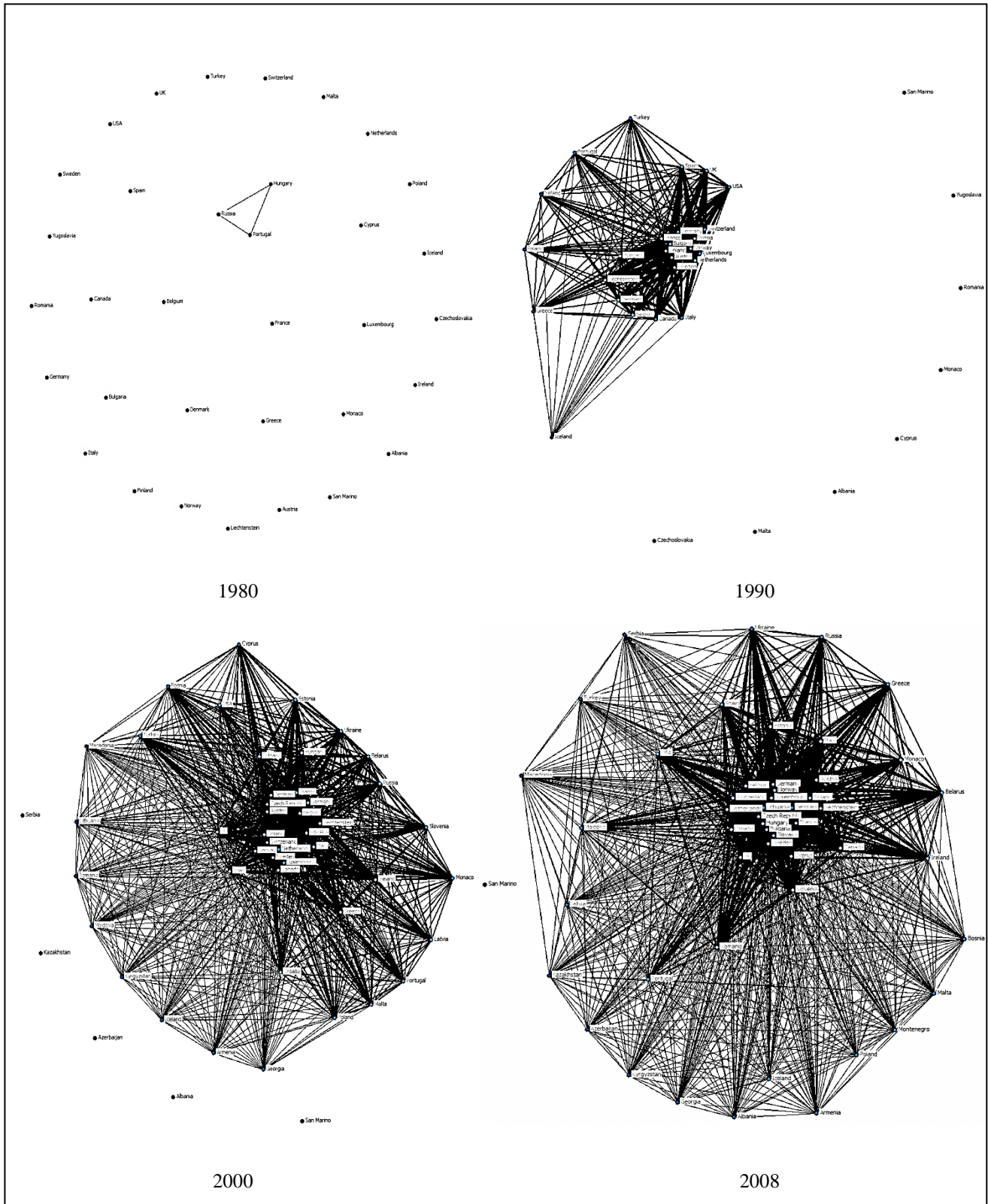
about the findings and implications of our chapter, since we believe that our research might have important implications for studies of regime effectiveness and for the analysis of social networks.

## **2.2 International Environmental Regimes and Social Networks – Reduced Uncertainty, Social Capital, and more Effective Institutions**

IEAs or international environmental regimes, such as the CLRTAP, are defined as principles, norms, rules, and decision-making procedures that circumscribe expected behavior in a specific problem field (Krasner 1983). In most cases, however, they are issue-specific, and policymakers and scholars alike questioned as to whether they have the capability to successfully address environmental problems (Lidskog and Sundqvist 2002: 79). This stems from the fact that environmental regimes are usually weak, normative orders voluntarily agreed upon by their parties, and with low capacity for sanctions in the case of someone infringing the rules (Mayer et al. 1993: 393). Against this background, the valid question asks whether these kinds of institutions can ever be effective at all. In consistence with Ward (2006), we argue in the following that a social network perspective can help providing an answer.

A social network is defined by a finite set of nodes, i.e., actors, and by the links, i.e., relationships, that tie two or more actors to each other (Granovetter 1985; Wassermann and Faust 1997: 20; Borgatti et al. 2009; Hafner-Burton et al. 2009; Maoz 2010; Ward et al. 2011). In our case, the mutual membership in any of the nine CLRTAP regimes can be considered a link between countries, while more mutual memberships signify stronger ties. First, countries may share direct links, i.e. dense and short connections between two states. For the purpose of illustration, Figure 2.1 shows four snapshots of the CLRTAP network between 1980 and 2008. The width of the edges is proportional to countries' shared CLRTAP regime membership: more numerous ties are represented by denser and stronger links; also, countries having similar strong

direct links are closely grouped together by adjusting to the nearest Euclidean distance. This is



**Fig. 2.1** The Evolution of the CLRTAP Network, 1980–2008

reflected in the clear cluster of Hungary, Portugal, and Russia for the year 1980. Further, although most states are connected through direct links in 2008, only Hungary, Portugal, and

Russia share direct ties in 1980. Thus, as Figure 2.1 demonstrates, while many countries have (strong) direct links, other states may have no or only weak direct ties. Macedonia, for example, is connected through much weaker links than, e.g., Switzerland in 2000; Serbia has no direct link at all with any node within the CLRTAP network of the year 2000.

In addition to direct ties, states may also share indirect links, i.e., ties to one or more than one intermediary that connects two states. Indirect links connect parties to other states and determine the density, i.e., the cohesiveness of a social network as measured by the number and strength of links (Wasserman and Faust 1997: 314f). A network may have many and strong edges between its nodes or not. In the former case, the density of the network is high and there are multiple, well established channels of communication. For example, a country may then be better able to communicate indirectly with a dyadic counterpart (Dorussen and Ward 2008: 192f). To illustrate this, consider Iceland and Ireland that have only a weak direct tie with each other in 1990 (Figure 2.1). However, Iceland is well connected to Denmark, which, in turn, has a strong link to Ireland. Hence, Iceland and Ireland also share an indirect link to one another via Denmark as an intermediary. As indicated, social network analysis also offers the possibility to analyze longer chains involving more than one intermediary.

Against this background, Ward (2006) argues that links in social networks, both direct and indirect ones, facilitate transmitting information about interests and intentions and promote a common understanding thereof. Links that are shorter and denser convey information with lower costs, more precisely, and faster. This, ultimately, leads to decreased uncertainty and more trust, as well as mutually accepted norms (see also Hafner–Burton and Montgomery 2006; Dorussen and Ward 2008: 194f; Hafner–Burton et al. 2009: 569; Leifeld and Schneider 2012; Ward and Cao 2012). In turn, this interaction through network ties (Ringquist and Kostadinova 2005: 87), ‘which comes into existence when individuals attempt to make best use of their individual resources’ (Coleman 1990: 300), influences the behavior of states by ‘endowing some with greater social power and by shaping common beliefs about behavior’ (Hafner–Burton and Montgomery 2006: 8). In other words, networks contain social capital, which Putnam (2000: 19)

defines as ‘connections among individuals – social networks and the norms of reciprocity, and trustworthiness that arise from them’ (see also Coleman 1990: 310).

Social capital embodies mutual obligations, relations of trust, norms, common expectations, authority relations, and organizations that facilitate collective action in various ways (Coleman 1990: 300ff; Dorussen and Ward 2008; Pretty and Ward 2001: 209f; Ward 2006: 151ff; Leifeld and Schneider 2012: 3): first, social capital creates obligations and expectations that help enforce cooperation. Multiple ties, especially when strongly established, allow sanctions such as the withdrawal from a voluntary regime, and positive incentives, e.g., issue linkages, to be used more effectively; second, since non-cooperating actors can be excluded from other forms of reciprocity, interaction may increase the likelihood that actors pursue shared goals through complementary means; finally, the connection of issues and interests furthers predictability of the behavior of other countries and, therefore, establishes trust, which lowers the fear and uncertainty that other states will defect from a cooperative agreement.

Ward (2006) elaborates here that countries with various ties to outside parties are extensively involved in relationships with the latter. This makes states more embedded or central in the network (Wasserman and Faust 1997: 173; Ward 2006: 151f). In Figure 8.1, the US is clearly a central actor in the post-1980 networks, since there are strong links for almost every dyadic combination of the US and another state. At the opposite extreme, San Marino can hardly be seen as central. The centrality of states determines the amount of information they receive. Countries that are more central will receive more information, which is seen as helpful for enhancing cooperation between countries, since this develops a mutual understanding, common norms, and good relations via social capital (Ward 2006: 151f; Coleman 1990: 310; see also Lidskog and Sundqvist 2002: 81; Haas 1993: 187, 1997: 200; Slikker and van den Nouweland 2001: 21ff; Dorussen and Ward 2008: 195). Ultimately, such a network embodies social capital that may be brought to bear on nations integrated into it, making these actors less likely to free ride and defect from cooperation (Ward 2006: 151). We seek to test this hypothesis for the CLRTAP case:

**Hypothesis 2.1:** States that are more central to the CLRTAP network are *ceteris paribus* more likely to cooperate with this IEA's targets.

## 2.3 Centrality in the CLRTAP Network – A Conditional Effect

Given the previous argumentation, it is a higher flow of information and social capital, i.e., consensual and trusted knowledge, which shape the CLRTAP (see also Lidskog and Sundqvist 2002: 81). However, Young (1999) emphasizes that besides the perspective where a regime and its network stimulate processes of reduced uncertainty and increased social capital, there exists another utilitarian way, where states operate according to a cost–benefit model: states act strategically then by incorporating the behavior of other states into the analysis of their situation and their appropriate reaction with the regime (Murdoch et al. 1997). Thus, we argue in the following that the impact of social capital, conceptualized by actors' centrality in the CLRTAP network, may not necessarily have the power to mould the interests of states.

First, controlling pollution is often viewed as an 'imperfect public good in that because of spillovers (i.e., pollution that crosses national boundaries), some of the value of these goods accrues to those who do not provide them' (Ringquist and Kostadinova 2005). Put differently, in the case of transboundary air pollution, the emission behavior of a state can induce both negative and positive externalities on other states, depending on its increasing or decreasing level of emissions. For example, Murdoch et al. (1997; 2003) illustrate the value of explicitly modeling the strategic behavior of nations when faced with providing these goods. Consider the pollution control decisions of nations  $i$  and  $j$  where a substantial amount of  $j$ 's pollution falls on  $i$ . If  $j$  reduces pollution,  $i$  will benefit and, thus, has fewer incentives to reduce pollution itself. More generally, if other nations in the network decrease the (value of the) public good by increasing their pollution levels, a country will take this defection into account and will be less likely to

provide the public good on its own (see also Simmons and Elkins 2004).

Second, it is accordingly plausible that increasing pollution of other states in the CLRTAP network offsets the positive effect of a country's central position substantially. Conditional on the existence of such negative externalities within the CLRTAP, central positions of states may actually not induce positive influences on cooperation with the regime as described in the previous section, since the costs of cooperating toward CLRTAP targets and providing the public good increase due to its imperfect nature. Under those circumstances, a state may decide to forego emission reductions and allocate its resources otherwise.

Third and ultimately, the effect of network centrality on regime effectiveness partly depends on the pollution behavior of other countries. Imagine that a state  $i$  is well-connected in the CLRTAP network through multiple direct and indirect connections. This implies that  $i$ 's rate of cooperation with other regime members is driven by social capital, i.e., reduced uncertainty, shared norms, and trust. At the same time, however, the rate of cooperation might as well be affected by the pollution patterns of other states in the network. Depending on the degree of non-cooperation of other nodes in the CLRTAP network, we claim that this may even induce a negative impact of network centrality on the compliance with the CLRTAP's targets. On one hand, it could be that  $i$  has a very central position in the network, e.g., post-1989 Switzerland in Figure 1 above. Our argument on the independent effect of network centrality predicts that this positively influences a state's cooperative efforts within the CLRTAP (see Ward 2006). We should observe this outcome as well if there are only a few defecting other states, i.e., if the vast majority of the remaining nodes in the CLRTAP does cooperate. On the other hand, it may be that  $i$  has a very central position in the network, but, at the same time, multiple other states defect from cooperation within the network. Due to the existence of the latter, there is the possibility that the positive effect of a country's central position in the CLRTAP network substantially decreases with an increasing pollution level of the other states therein. Put differently, conditional on the pollution behavior of other states in the CLRTAP network, the impact of a more central

state position in a network may actually induce two very opposing outcomes.<sup>4</sup> We, therefore, claim in our second hypothesis:

**Hypothesis 2.2:** The pollution level of other states conditions the effect of network centrality on CLRTAP regime effectiveness. The higher other states' rate of defection, the less positive is the impact of network centrality on cooperation with the CLRTAP regime.

## 2.4 Research Design

### 2.4.1 Data

For empirically testing our hypotheses, we compiled new data on the CLRTAP network. This dataset is comprised of one symmetrical adjacency matrix for each year between 1980, i.e., the first year the CLRTAP was open for ratification, and 2008, i.e., the last year for which we have data for our dependent variable as operationalized below. We treated any (potential) member of the CLRTAP as a node in each of these adjacency matrices as long as they were independent states.<sup>5</sup> The ties between nodes constitute the mutual membership of two nodes in any of the CLRTAP treaties or protocols in a given year, while a state has to ratify any of those to become a member. Also note that a CLRTAP treaty or protocol is only considered to form ties between states in and after the year it was open for ratification. For these treaties and protocols, we considered: a) the 1979 Framework Convention; b) the 1984 Cooperative Program for Monitoring and Evaluation (EMEP) Protocol; c) the 1985 Sulfur Protocol; d) the 1988 NO<sub>x</sub> Protocol; e) the 1991 VOC Protocol; f) the 1994 Sulfur Protocol; g) the 1998 Heavy Metals

---

<sup>4</sup> This argument is somewhat similar to Cao (2010) and Cao and Prakash (2010; 2012).

<sup>5</sup> For example, we do not consider satellite states such as Belarus before its independence in 1991.



Protocol; h) the 1998 POPs Protocol; and i) the 1999 Multi-Effect Protocol. Consequently, more mutual memberships between two nodes signify a stronger tie between countries. Figure 1 above illustrates the structure of this dataset for four selected years.

Due to the reasons stated in the introduction, we focus on the CLRTAP network instead of the general (environmental) system of international regimes.<sup>6</sup> Moreover, the CLRTAP is weakly institutionalized, which favors the analysis as a system of IEAs. In our view, the CLRTAP primarily serves as a vehicle that establishes links between its member states through the encounter of representatives in meetings and the working practices of this institution. Hence, the CLRTAP matters through its network effects and we can, thus, in practice ignore its (direct) influence as an intervening variable. This implication is consistent with quantitative research on the effectiveness of the CLRTAP (Finus and Tjøtta 2003; Ringquist and Kostadinova 2005; Aakvik and Tjøtta 2011). Furthermore, the EMEP collects and models emission data from states and regularly provides governments under the CLRTAP with qualified scientific information. Consequently, the CLRTAP fulfills a critical criterion for establishing social capital, i.e., information provision and, following from that, decreased uncertainty.

Based upon that, we computed two different network centrality measures that we describe in the following and merged these items, along with our dependent variable and several control covariates, into a new dataset that has the country-year as the unit of observation. Ultimately, the final data comprise up to 51 countries in each year between 1980 and 2008.

#### *2.4.2 Operationalization – Dependent Variable and Core Explanatory Items*

Given our theoretical arguments, we require a measure for cooperation with the CLRTAP or, put differently, its effectiveness. Generally, environmental effectiveness is categorized into output, outcome, and impact categories (Miles et al. 2002). Output refers to the formal implementation of

---

<sup>6</sup> We also checked for influences through general (environmental) intergovernmental organizations and found weaker effects.

institutional targets; outcome denotes the change in human behavior associated with the international environmental agreement in question; and impact concerns the actual change of the biophysical environment, e.g., an improvement in air quality measured in terms of particulate matter as a percentage of air volume. Since we are primarily interested in whether the LRTAP, through its network effects, does improve air quality or not, we focus on the outcome category (Mitchell 2008) by employing SOx emissions in 1000 tonnes per country per year.<sup>7</sup> The accuracy of this variable depends on measurement techniques and, for air pollution, on how external influences such as wind or water transportation patterns are taken into account. In the case of the CLRTAP, this indicator is reasonably well developed and reliable (EMEP 2008a; 2008b). We take the log of this item to account for its skewed distribution and impute missing values linearly.<sup>8</sup>

In order to capture a state's position in the CLRTAP network and, consequently, its degree of centrality (see Hafner–Burton et al. 2009: 563f), we rely on two measures. First, we employ *Degree Centrality*. As stated, states prefer links that connect them to any counterpart in the network via the shortest and most efficient ties, since these transmit information with lower costs, more precisely, and faster (Dorussen and Ward 2008: 197). More precisely, *Degree Centrality* is calculated by,

$$\text{Degree Centrality } (i) = \sum_{\forall i \neq j} v(i, j)$$

where  $i$  and  $j$  are two countries in a dyad and  $v$  the value, i.e., the strength of a tie linking the two states. In order to calculate *Degree Centrality* with this equation, the network must satisfy the condition  $r \leq (n-2)^{1/2}$ , where  $n$  is the number of countries and  $r$  is the ratio of the largest edge value in a network to the smallest edge value (Dorussen and Ward 2008: 196). This is given in any year under study, however.

Second, we use the variable *Information Flow*, a network measure that considers a country's

---

<sup>7</sup> Next to SOx emissions, NOx emissions constitute a second major pillar of the CLRTAP. Hence, we also estimated models for the latter and obtained virtually the same results as presented below. Due to space limitations, we do not present these findings, but they can be replicated with the replication material.

<sup>8</sup> Concerns may arise due to this technique for addressing missing values. We return to this issue below.

whole range and any strength of all ties to the entire CLRTAP network (Dorussen and Ward 2008; Ford and Fulkerson 1956; Freeman et al. 1991). This item essentially measures centrality by the reduction in total information flow in the network if that node did not exist, i.e., the degree to which the maximum flow between all unordered pairs of points depends on  $i$ , and it is calculated by,

$$Information\ Flow(i) = \sum_{j < k}^n \sum_{j < k}^n v_{jk}(i)$$

where  $i \neq k \neq j$ , and  $i$  signifies a node in the network, while  $v_{jk}$  is the maximum flow of information or the strength of ties from country  $j$  to  $k$  that passes through  $i$ .

Albeit relying on different ways of measurement, both network variables, therefore, capture the degree of centrality or embeddedness of a state in the network.<sup>9</sup> The more central the position of a country in the CLRTAP network, the more possibilities exist for obtaining information via direct and indirect linkages. The first measure, *Degree Centrality*, only takes into account direct ties, while the second variable *Information Flow* counts flows of information through all possible chains of intermediaries, i.e., the existent number of direct and indirect links a country has to other states in the entire CLRTAP system (Ford and Fulkerson 1956).

Finally, for testing our second hypothesis, we include a variable that measures the SOx emission outputs of all other countries in the network except for the state in question. More specifically, we lagged the dependent variable that we described above and summed the logged SOx emissions over each year while subtracting the lagged and logged SOx emission level for the country under study. This approach essentially follows the logic of a spatial lag model, although we do not weigh the SOx emissions from other countries, e.g., by proximity (Franzese and Hays 2008; see also Cao 2010: 833; Cao and Prakash 2012: 75; Ward and Cao 2012: 10). Additionally, we include a multiplicative term between this item and *Degree Centrality* and *Information Flow*, respectively, to capture the postulated interaction effect of the second hypothesis.

---

<sup>9</sup> Apart from the two measures described here, we also considered Bonacich's (1972) eigenvector measure that takes account of the centrality of adjacent nodes when calculating the centrality of a particular node. However, the results for that are identical to the ones presented below and, thus, we omit them from the manuscript.

### 2.4.3 Operationalization – Control Variables

We also have to control for other variables that may affect our dependent variable in order to avoid potential omitted variable bias. Furthermore, including alternative predictors of countries' SOx emissions that we employ as a measure of regime effectiveness also addresses possible selection effects, since only certain types of countries select themselves into the network. To this end, we also incorporate several international and domestic factors by following Ward (2006) and Ringquist and Kostadinova (2005). More specifically, we first consider environmental vulnerability that we measure by the logged share of a country's territory covered with forest. Data for forest coverage is available in five-year periods from the World Bank Development Indicators and we linearly interpolate missing data. Interpolation seems straightforward, as forest cover is neither very volatile nor experiencing random shocks between the measurement points.

Second, the literature on environmental politics and states' pollution patterns frequently argues for the environmental Kuznets curve. This claim states that the environment is a relatively low priority for citizens in the early stages of development, but it becomes a higher priority as development increases (Seledin and Song 1994; Grossman and Krueger 1995). To control for this non-linear effect, we include the logged and lagged real GDP per capita (*GDP per capita* ( $\ln$ )) and its square term (*GDP per capita* ( $\ln$ )<sup>2</sup>). Data for these variables is complete over the whole time series and were obtained from the World Bank Development Indicators.

Third, we also take into account the impact of a lagged and logged population item to control for demographic influences on pollution levels: countries with a higher population generally produce more anthropogenic emissions, like SOx. Again, we take this variable from the World Bank Development Indicators and it is a count of all residents regardless of legal status or citizenship except for refugees not permanently settled in the country of asylum.

Fourth, democracies, relative to non-democracies, are more likely to provide environmental public goods, i.e., environmental quality, at the national level and are more inclined to cooperate

in international environmental problem solving efforts as well (e.g., Congleton 1992; Ward 2008; Bernauer et al. 2010). The underlying reasoning is that democratic governments need to provide more benefits, including environmental public goods, to a relatively large (compared to non-democracies) part of the electorate in order to survive politically. We use Polity IV data to measure democracy (Marshall and Jaggers 2004): *Democracy Score* ranges from  $-10$  (full autocracy) to  $+10$  (full democracy).

Fifth, we control for trade openness (or salience), defined as the sum of imports and exports as a percentage of GDP. *Trade Openness* is conceptually important as it reflects the actual and perceived economic conditions and levels of insecurities associated with the vagaries of the global market that might affect the chances to unleash changes in states' environmental policies. We take the variable from the World Bank Development Indicators, while the final item is logged and lagged by one year as well.

Finally, we measure the level of national civil society strength by the number of national ENGOs registered in each country using data from the International Union for Conservation of Nature (Bernauer et al. 2013). The literature leads us to expect that pollution levels will fall with the power of green civil society lobbying groups (see Bernauer et al. 2013; see also Cao and Prakash 2012: 70; Ward and Cao 2012: 6).

**Table 2.1** Descriptive Statistics

	Obs	Mean	SD	Min	Max
SOx Emissions (ln)	1234	5.09	2.52	-4.97	10.06
Degree Centrality	1245	84.74	71.74	0	265
Information Flow	1245	30.12	18.73	0.00	62.52
SOx Emissions Other (ln)	1184	216.11	25.45	173.25	259.97
Forest (ln)	1216	3.00	1.55	-31.88	4.30
GDP per capita (ln)	1245	8.92	1.37	5.25	11.59
GDP per capita (ln) <sup>2</sup>	1245	81.49	23.62	27.53	134.35
Population (ln)	1235	15.72	1.93	10.14	19.53
Democracy Score	1232	7.00	5.40	-9	10
Trade Openness (ln)	1187	84.06	47.30	-190.04	319.55
Domestic ENGOs	1175	6.44	10.69	0	82

Table 2.1 summarizes the descriptive statistics of the variables.

## 2.5 Empirical Findings – Fixed Effects Regression Models

Time-series cross-section data pose the risk of unit-specific and time-invariant heterogeneity correlated with the explanatory variables. Not controlling for this may result in omitted variable bias. Therefore, we cluster the standard errors on countries and incorporate country fixed effects to capture idiosyncratic national path dependencies in SOx pollution patterns or other forms of cross-section heterogeneity. On the other hand, we also incorporate year fixed effects that control for the impact of common external shocks. We do not include a lagged dependent variable, however, as this can cause bias and inconsistency in the parameter estimates in fixed effect models (Beck and Katz 1995). Our results are summarized in Tables 2.2–2.3. Table 2.2 focuses on our first hypothesis without the interaction term as we examine the impact of our two different centrality measures (with and without control items) separately, while Table 2.3 tests our second hypothesis, since the multiplicative term with *Degree Centrality* and *Information Flow*, respectively, is added (to the control covariates).

Before turning to our core explanatory variables, we briefly discuss the results of the controls. Consistent with the previous literature that emphasized the importance of these variables, most of those items perform in line with our expectations. Others, however, reveal a somewhat unexpected behavior. More specifically, *Forest* and *Democracy Score* highlight that a) the larger the share of a country's territory covered with forest and b) the more democratic a state under study, the higher its SOx emissions. While the substantial impact of the former is relatively small, i.e., a 10% increase in a country's forest coverage induces a 0.2% rise in SOx emissions (on average in Table 2.2; Table 2.3: 1% increase on average in the dependent variable), the latter is likely to be explained by our strategies for correcting any problems stemming from the panel

structure of the data. Put differently, fixed effects models lack the ability to make inferences about time-invariant or slow-moving variables, because those covariates are highly collinear with fixed effects and their coefficients are either not identified or difficult to estimate with precision (see Plümper and Troeger 2007). And even despite some outliers, *Democracy Score* is in fact hardly changing over time.

**Table 2.2** The Effectiveness of the CLRTAP Network

	Model 2.1	Model 2.2	Model 2.3	Model 2.4
Degree Centrality	−0.007 (0.001)***		−0.005 (0.002)***	
Information Flow		−0.015 (0.006)**		−0.013 (0.006)**
Forest (ln)			0.019 (0.002)**	0.027 (0.009)***
GDP per capita (ln)			2.690 (1.138)**	4.154 (1.104)***
GDP per capita (ln) <sup>2</sup>			−0.145 (0.071)**	−0.231 (0.070)***
Population (ln)			3.028 (0.961)***	3.694 (0.905)***
Democracy Score			0.021 (0.012)*	0.029 (0.013)**
Trade Openness (ln)			−0.003 (0.002)	−0.003 (0.002)
Domestic ENGOS			0.002 (0.007)	0.002 (0.006)
Constant	5.779 (0.087)***	5.837 (0.100)***	−54.337 (16.023)***	−71.011 (14.922)***
Obs	1234	1234	1099	1099
F	19.80	21.03	39.98	21.23
Prob > F	0.00	0.00	0.00	0.00

Standard errors clustered on country in parentheses; country and year fixed effects included in each model but not displayed due to space limitations

\* significant at 0.1 level, \*\* at 0.05 level, \*\*\* at 0.01 level (two-tailed)

Second, our variables capturing effects from population size and income display expected results, though. *Population (ln)* is positively signed throughout all model estimations and significant at conventional levels virtually independent from specifications. A substantial impact of this variable is given as well: on average, a 10% increase of the population leads to a 20% rise

in sulfur emissions. Furthermore, the coefficient of *GDP per capita (ln)* is positive and its square term negative, reflecting the hypothesized non-linear relationship as depicted by the environmental Kuznets curve (Grossman and Krueger 1995; Seleden and Song 1994). The turning point associated with income lies at around \$6,592.74 on average here.

**Table 2.3** The Conditional Impact of Network Measures for CLRTAP Effectiveness

	Model 2.5	Model 2.6
Degree Centrality	−0.003 (0.002)	
Information Flow		−0.013 (0.006)**
SOx Emissions Other (ln)	−0.912 (0.023)***	−0.918 (0.021)***
Interaction Term	0.001 (0.001)	0.001 (0.000)*
Forest (ln)	0.102 (0.022)***	0.106 (0.021)***
GDP per capita (ln)	0.643 (0.380)*	0.762 (0.391)*
GDP per capita (ln) <sup>2</sup>	−0.039 (0.022)*	−0.046 (0.022)**
Population (ln)	0.201 (0.125)	0.265 (0.119)**
Democracy Score	−0.001 (0.002)	0.001 (0.002)
Trade Openness (ln)	−0.001 (0.001)	−0.001 (0.001)
Domestic ENGOS	0.001 (0.001)	0.001 (0.001)
Constant	172.923 (5.720)***	172.544 (5.791)***
Obs	1056	1056
F	4970.92	4256.67
Prob > F	0.00	0.00

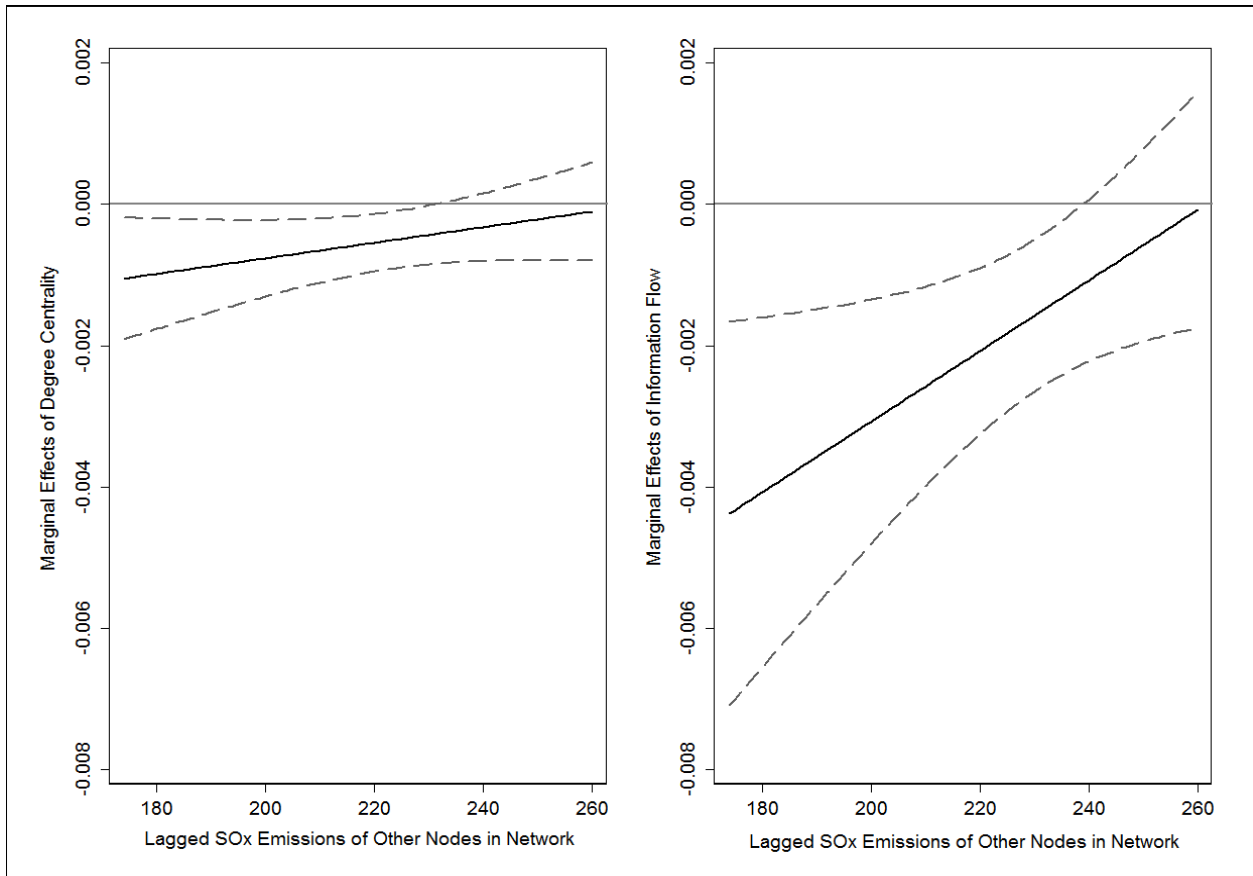
Standard errors clustered on country in parentheses; country and year fixed effects included in each model but not displayed due to space limitations

\* significant at 0.1 level, \*\* at 0.05 level, \*\*\* at 0.01 level (two-tailed)

Finally, *Trade Openness (ln)* and *Domestic ENGOS* are statistically insignificant throughout all estimations. Adding or suppressing variables from the models does not alter this result. Hence,



their impact on SOx emissions is likely to be minor at best then.<sup>10</sup> Consequently, this naïve test of the impact of CSOs in the form of ENGOs seems inconclusive and, hence, theoretical as well as empirical improvements for studying civil society's interaction with official actors and its impact seem necessary.



**Fig. 2.2** The Conditional Impact of the CLRTAP Network Measures

Coming to our variables of main interest, we find support for the hypotheses. In particular, *Degree Centrality* and *Information Flow* are negatively signed and highly significant at the 5% level at least in Table 2.2. As for the quantities of interest, for a one-unit increase in *Degree Centrality* (*Information Flow*), we expect to see about a 1% (1.5%) decrease in SOx emissions. This is in line, both in terms of significance and substance, with Ward (2006) and demonstrates that the network effects do also function within the CLRTAP as such: parties more central to the

<sup>10</sup> With regard to *Trade Openness*, Copeland and Taylor (2003) demonstrate that its effect on our dependent variable could be either positive or negative, depending on the specific nature of exports and imports. Thus, these effects potentially cancel each other out leading to the insignificance of the variable in our models.

CLRTAP network can rely on and signal mutual interests, shared preferences, and decreased uncertainty with all actors involved. In turn, a central position embodies social capital, which facilitates that a well-connected state is *ceteris paribus* more likely to cooperate with the CLRTAP's targets.

With regard to our second hypothesis, note that we cannot interpret the constitutive terms, i.e., *Degree Centrality (Information Flow)*, *SOx Emissions Other (ln)*, and the related interaction variable, directly (see Brambor, Clark, and Golder 2006). We, thus, compute the marginal effects of *Degree Centrality* and *Information Flow* along the values of *SOx Emissions Other (ln)* to allow for a substantive interpretation. Figure 2.2 shows our results. As demonstrated there, we are largely able to obtain a statistically significant impact of either *Degree Centrality* or *Information Flow* conditional on *SOx Emissions Other (ln)*. This essentially mirrors the results from Table 2.2. However, the impact of *Degree Centrality* and *Information Flow* becomes insignificant with higher levels of pollution emissions from other states within the CLRTAP network. This supports our notion on the strategic behavior of states and, ultimately, that the central position of states within the CLRTAP network is not always and necessarily more environmental-friendly (Murdoch 1997; 2003). The positive effect of countries' central positions in the CLRTAP network, thus, substantially decreases with an increasing pollution behavior of other states therein. Put differently, conditional on the pollution behavior of other states in the CLRTAP network, the impact of a more central state position in a network may indeed lead to two opposing outcomes. However, it seems to be good news that the effect stemming from the network variables only becomes insignificant – and not significantly positive inducing that more central states in the network do actually pollute more as well. While this supports our claim as stated in the second hypothesis, it may be apparent that the influence of the CLRTAP network is strong enough to prevent 'environmental-hostile' behavior of more central states.

## 2.6 Empirical Findings – 4-Fold Cross-Validation Quasi-Experimental

### Setup

Although Tables 2.2 and 2.3 emphasize a robust and significant support for our theory, several scholars increasingly argue that drawing inferences from statistical significant results might be misleading (e.g., Ward, Greenhill, and Bakke 2010). While we were able to identify the underlying relationship between *SOx Emissions (ln)* and the independent variables, our models also have to perform well when presented with new data. If, however, the models merely provide a detailed description of the relationships that happen to exist in the original data without capturing their true causal relations, their ability to make correct predictions in a new dataset will turn out to be poorer (Beck, King, and Zeng 2000). Hence, this section employs a causal model to differentiate statistical association from causal impact (see Cao 2009: 1118).

Ideally, we would test the predictive power of our preferred model using new data. Our sample contains all available country years, however, and we, therefore, conduct a cross-validation exercise (Efron 1983; Ward, Greenhill, and Bakke 2010). Basically, cross-validation relies on dividing the existing data into subsets, using random assignment of the cases to the different sets. All except one of the subsets are then pooled together and routinely estimated by applying the preferred model specification. The remaining subset, called the ‘test set’ (Ward, Greenhill, and Bakke 2010: 370), subsequently serves to assess the predictive power of the model estimated on the pooled subsets. We measure the predictive power by calculating the area under the ROC curve (Ward, Greenhill, and Bakke 2010: 370).<sup>11</sup>

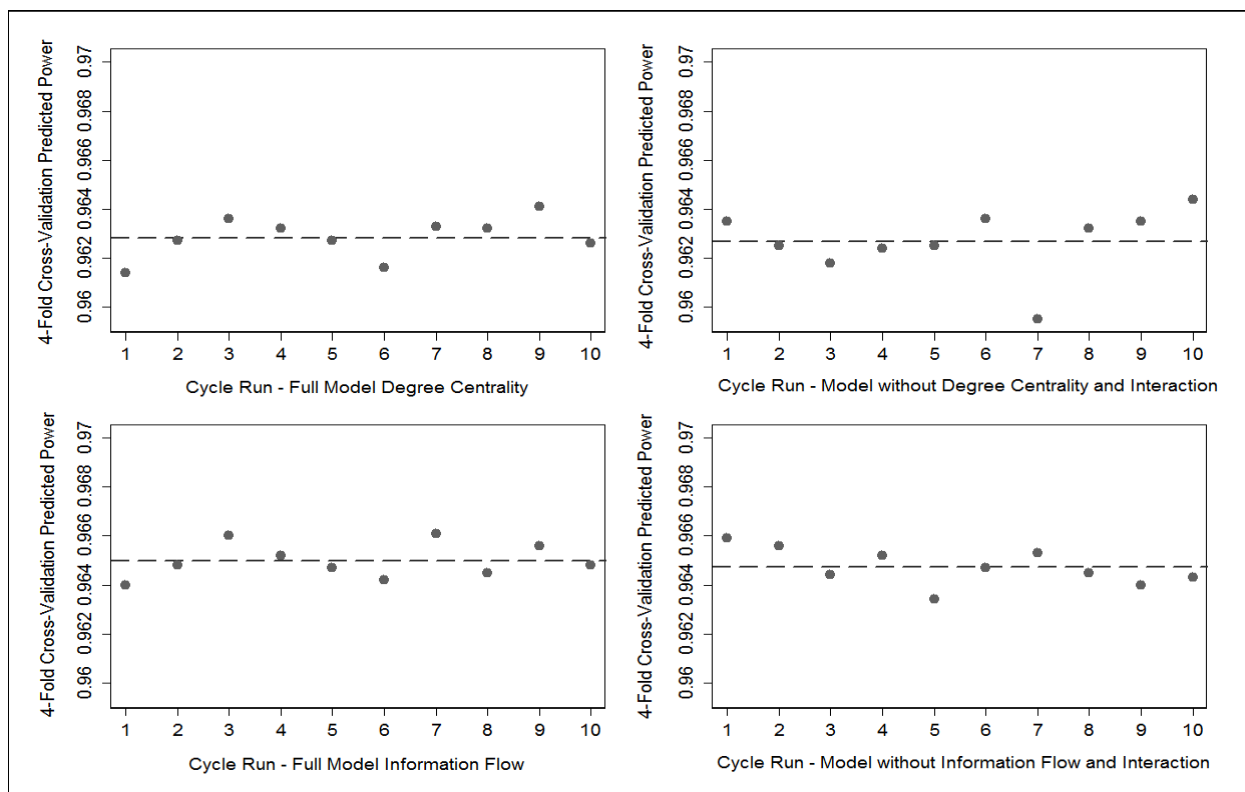
We use a 4-fold cross-validation quasi-experimental setup that we repeated ten times (Ward, Greenhill, and Bakke 2010). As a result, we randomly divide our sample into four subsets, pool three and keep one as the test set, while repeating the above-described procedure ten times. We perform this 4-fold cross-validation either for the full model or a model that omits *Degree*

---

<sup>11</sup> Receiver-operating characteristics (ROC) depict relative tradeoffs between benefits (true positives) and costs (false positives). The area under the ROC curve (AUC) serves to compare the performance of classifiers (Fawcett 2006).

*Centrality (Information Flow)*, *SOx Emissions Other (ln)*, and the multiplicative term from the estimation simultaneously.<sup>12</sup>

Figure 2.3 depicts our findings in this context. The power of the full models is reasonably high (with *Degree Centrality*: 0.9628; with *Information Flow*: 0.9650). Also, the average AUC of the estimations without *Degree Centrality (Information Flow)*, *SOx Emissions Other (ln)*, and the multiplicative term is on average lower than the AUC of the full model: while we obtain a value of 0.9627 for the constrained *Degree Centrality* model, the constrained *Information Flow* model reveals a value of 0.9647. This even holds in comparison to unreported values of the other explanatory variables. In conclusion, the predictive power of our core variables as estimated with a 4-fold cross validation quasi-experimental setup is given.



**Fig. 2.3** The Impact of the CLRTAP Network Measures – 4-Fold Cross-Validation Quasi-Experimental Setup

*Note:* 4-way cross-validation estimates are shown by dots. Dashed horizontal line signifies mean estimate AUC over all four-way cross-validations that were repeated for 10 different random partitions of the data

<sup>12</sup> A prerequisite for this approach is a dichotomous dependent variable. Thus, we transformed *SOx Emissions (ln)* into such a measure by a) dividing it into equally distributed quintiles and b) allocating the value of 0 to quintiles 1–3 and the value of 1 to quintiles 4–5. We then used probit models, but despite this limited dependent variable, our results are virtually identical to Table 8.3.

## 2.7 Sensitivity and Robustness Checks

We conducted several checks to ensure that our results are not undermined by violations of model assumptions or driven by particularities of the data. First, we calculated the variance inflation factors (VIFs) for the multivariate models in order to examine in how far multicollinearity influences the precision of our estimates. The results show, however, that our core explanatory variables are largely not collinear with the other variables, apart from each other ( $VIF=9.07$ ;  $r=0.94$ ;  $p=0.00$ ). Next to theoretical reasons, this constitutes an econometrical rationale for not including *Degree Centrality* and *Information Flow* simultaneously in the models.

Second, Clarke (2005) shows that control variables may actually increase bias instead of decreasing it. In addition, some of the controls could potentially undercut the substance of our core variables of interest. However, Models 2.1–2.2 do not include the controls and the core results remain unchanged.

Third, we imputed the values of several covariates linearly in order to avoid problems with missing data (Honaker and King 2010). The underlying assumption for this approach is that the values of those variables increase (or decrease) linearly if they are actually not observed. However, Boehmer et al. (2011) and Barbieri et al. (2009) point out that imputation assumptions could also induce biased estimates, since values are unlikely to be missing at random. In order to address potential concerns in this regard, we estimated all models again while omitting the imputed values. Nevertheless, this does not affect our findings either.

Fourth, since time series of emission levels are usually non-stationary, i.e., the residuals exhibit strong serial autocorrelation, we sought of addressing this by estimating our fixed effects models with panel-corrected standard errors and a Prais-Winsten transformation. The estimates remain virtually unchanged, lending again more credibility to our results.

Finally, we estimated new regressions using three-stage least squares regression (3SLS) for determining if our models might suffer from simultaneity, i.e., reverse causality. In the case of

voluntary IEAs, possible bias due to self-selection into the agreement constitutes a particularly salient problem (e.g., Bratberg et al. 2005; Ringquist and Kostadinova 2005). Hence, 3SLS is an obvious choice to re-estimate our models given the structure of the data. To this end, we needed to specify an equation for either of the two variables that pertain to an actor's degree of centrality in the CLRTAP network (see Ward 2006). We explored possible specifications by running multiple models similar to those shown in Table 2.2, based on the same theoretical rationale. In 3SLS, regressing each such variable on all exogenous variables in the system generates instruments for endogenous variables. In our case, the endogenous variables are *SOx Emissions (ln)* and *Degree Centrality* or *Information Flow* (depending on the model specifications), respectively. While the results are very similar to Table 2.2, it is in particular striking that *SOx Emissions (ln)* is significant and negatively signed at 1% in the estimate of the associated equation for *Degree Centrality* or *Information Flow*, respectively. This supports the view that causality may flow from *Degree Centrality* and *Information Flow*, respectively, to *SOx Emissions (ln)* and the other way round. However, either *Degree Centrality* or *Information Flow* has a negative impact that is significant at conventional levels and in its substantive impact essentially identical to Table 2.2. Although 3SLS works as an acceptable robustness check, we refrained from using it as the preferred model of choice because of sample constraints: the 3SLS estimator is consistent, yet biased in relatively small samples (Angrist and Pischke 2009).

## 2.8 Conclusion

This chapter demonstrated that the network effects as originally outlined by Ward (2006) work similarly in a more nuanced, disaggregated, and homogenous network. It reveals, however, that we also have to take into account persistent conditional effects. We applied Ward's (2006) theory to the CLRTAP and argued that parties more central to the CLRTAP network could rely on and

signal mutual interests, shared preferences, and decreased uncertainty with all actors in the CLRTAP network. In turn, a central position embodies social capital, which may be brought to bear on nations well integrated into it, facilitating that such a state is *ceteris paribus* more likely to cooperate with the regime's targets. On the other hand, however, if other countries in the network do not cooperate, it is likely that the positive effect stemming from social capital disappears and that a country will defect. Our analysis revealed strong and robust support for the derived theoretical hypotheses.

The contribution of our chapter to the literature is twofold. First, we provide another empirical proof of Ward's (2006) proclaimed impact of centrality in (environmental) networks. Second, we also offer the first empirical test for and theoretical argument of a conditional effect: depending on the pollution levels of other states of the CLRTAP, the impact of a more central position in a network may actually induce two contrasting outcomes. Moreover, our findings highlight that IEAs can affect state behavior toward environmental protection nonetheless. Contrary to more recent quantitative studies that focus on IEAs as independent intervening variables, we produce evidence on regimes affecting states' behavior by taking into account strategic behavior and the conditionality of regime effectiveness from a social network perspective.

While we believe that our work contributes to studies of regime effectiveness and to the analysis of social networks in the above-mentioned way, it may also have some crucial practical implications for policymakers. First, social capital is likely to be an important determinant for regime effectiveness. An 'optimal' institutional design should, thus, incorporate conditions and regime design features that are most favorable to building, establishing, and fostering social capital. These could encompass regular meetings to enhance communication flows, thereby reducing uncertainty about interests of co-participating countries, as well as the formation of monitoring agencies to further the development of trust among regime members. Second, strategic behavior matters, because states condition their environmental protection efforts on other states' actions. Reliable and credible monitoring is paramount then to assure regime parties

of cooperative behavior and to avoid (possibly false) perceptions of free riding. Third and this somewhat goes against recent empirical evidence (e.g., Murdoch et al. 1997; Finus and Tjøtta 2003; Ringquist and Kostadinova 2005; Aakvik and Tjøtta 2011), regimes may indeed affect states' behavior. In the light of the ongoing debate about alternative means to protect the environment, this finding is a strong case for investments into existing international environmental agreements or regimes.

Further avenues for future research do also exist. We outline two of them. On the one hand, although we believe having valid arguments for constraining the analysis to the CLRTAP, e.g., with regard to comparability, the generalization of the results to other regime networks may be subject to criticism. Further analyses should, therefore, amplify scope. Moreover, we essentially examined the (conditional) impact of only two distinct centrality measures in one environmental regime framework. It may well be that this rationale is at work in other environmental regimes, too. Second, we restricted our theory to one conditional effect, i.e., the strategic response of a state to other states' pollution levels. It is not necessarily implausible, though, that states condition their actions on other states' behavior in more than one dimension. For example, countries may consider international ties that do not emanate from environmental regimes, e.g., inter-state trade (see Cao and Prakash 2010; 2011; 2012). Future research along those lines seems promising from our point of view.

Finally, this chapter focused on the influence of civil society only in very simple manner. This naïve approach suggests that we require a more differentiated and systematic examination and, more importantly, have to take into account first under which conditions we observe the onset of governmental–civil society interaction in global environmental governance. This will be the focus of the next chapter.



### 3 A Closer Look at the Information Provision Rationale: Civil Society Participation in States' Delegations at the UNFCCC

#### 3.1 Introduction<sup>13</sup>

Perhaps in the most conspicuous form of governmental–civil society interaction, CSOs attend conferences and international negotiations as official members of state delegations (e.g., Clark et al. 1998: 13f; Clark 1995: 595; Steffek and Nanz 2007: 21).<sup>14</sup> During the climate change regime negotiations, for example, ‘more members of NGOs served on government delegations than ever before, and they penetrated deeply into official decision–making’ (Mathews 1997: 55). Nevertheless, states may deny this particular form of participation of civil society as it could constrain their sovereignty and might threaten their dominant position in negotiations (Clark et al. 1998: 10; see also Clark 1995; Stasavage 2004; Bloodgood 2011: 104).

As stated in the introduction, international negotiations primarily remain an inter–governmental affair and states keep the prerogative to determine which non–governmental actors may participate. Consequently, civil society groups are often denied access to policy–making processes at these fora or are only allowed to participate as observers, i.e., they are not permitted to express their positions during the negotiating process *per se* (Weiss and Gordenker 1996;

---

<sup>13</sup> At the time of submitting the habilitation, a version of this single–authored chapter has been accepted for publication at the *Review of International Organizations*.

<sup>14</sup> This does not imply that participating in state delegations is the exclusive avenue for exerting influence or that access to delegations always and necessarily induces access for civil society to higher levels of decision–making (Betsill and Corell 2001: 67; see also Stroup and Murdie 2013; Bernhagen 2012: 2; for a comprehensive overview of the study and roles of NGOs in global governance, see, e.g., Bloodgood 2011: 95ff). I claim, however, that it is one potential (and perhaps a sufficient) avenue for doing so. In consistence with that, Biermann and Gupta (2011: 1857ff) emphasize that the inclusion of civil society actors in international negotiations constitutes an important facet of those negotiations, while Gulbrandsen (2008) is particularly interested in the ‘privileged access’ of non–governmental actors (see also Sell and Prakash 2004: 151).

Raustiala 1997; Betsill and Corell 2001: 70; Thomann 2007).<sup>15</sup> Under these circumstances, civil society actors are excluded, possibly from the most crucial stages of international negotiations (Thomann 2007: 78; see also Gulbrandsen and Andresen 2004: 59; Oberthür et al. 2002: 134; Steffek and Nanz 2007: 11). In other words, despite the observation that some states consider the participation of civil society in their delegations, they are generally reluctant to allow non-governmental actors in their delegations, since these could constrain their sovereignty and also impede their position in negotiations. Thus, it is not obvious *ex-ante* why we actually observe these patterns of governmental–civil society interaction (Biermann and Gupta 2011: 1856).

However, the previous literature predominantly argues here that it is the expertise and provision of information by non-governmental groups (e.g., Hansen 1991; Keck and Sikkink 1998; Bloodgood 2002; 2011; Burstein and Hirsh 2007: 177; Bernhagen 2012), which gives states the necessary incentives to grant civil society access to negotiations in the form of participating in delegations (Albin 1999; see also Bernauer and Betzold 2012).<sup>16</sup> It is assumed that there is an information asymmetry between official actors and civil society (Austen-Smith 1997), and governments might then gain from including civil society representatives in their delegations (which these are likely to demand in exchange), because the latter have an advantage in providing policy advice, scientific expertise, and information about constituency views that governments could lack regarding the issue at hand (Raustiala 1997; 2001; see also Princen 1994; Corell and Betsill 2001; 2008; Yamin 2001; Sarewitz 2004; Hall and Deardorff 2006; Bernhagen 2008: 85f; Biermann and Pattberg 2008). International environmental negotiations are highly complex, and decision-makers need information to enhance their understanding of a problem in question and the implications of various policy alternatives under consideration (Raustiala 1997;

---

<sup>15</sup> Björkbom (1999: 406) illustrates this in the case of transboundary air pollution: ‘NGO pressure in the negotiating room has [...] had but a marginal influence on the results of the negotiations. This is partly due to the fact that NGOs could only act as observers.’

<sup>16</sup> This pertains to the rationalist contributions to the literature, which concur that the participation of civil society in any international setting can be explained by states’ need for information that those non-state actors can provide (Gulbrandsen 2008: 100). This is supposed to hold true for the states assembled in an international organization as a collective actor, or for single states when composing their official delegations, as in my case. However, while this chapter primarily represents a test, and in the end a challenge to, the predominant explanation of this phenomenon in the context of the climate change negotiations, thereby following Popper’s (1959) approach of falsifiability, I explicitly acknowledge that other explanations exist (see also Keck and Sikkink 1998). I will return to this issue in the chapter’s conclusion below.

2001; Keck and Sikkink 1998; Betsill and Corell 2001: 74; Gemmill and Bamidele–Izu 2002; Steffek and Ferreti 2009).

In more detail, first, civil society groups are frequently better positioned than governments to provide policy advice and expertise of a technical or scientific nature. Non-governmental organizations dedicate a considerable amount of their resources and efforts to gathering and disseminating information, and have ‘built-up expertise in many of the scientific, economic, and social and technical disciplines relevant to sustainable development’ (Yamin 2001: 157; Gough and Shackley 2001; Esterling 2004; Stroup and Murdie 2013). Furthermore, civil society provides negotiators with ‘access to competing ideas from outside the normal bureaucratic channels’ (Gemmill and Bamidele–Izu 2002; see also Raustiala 1997: 727f; Gulbrandsen 2008: 101). Second, civil society representatives can also provide information about the positions and preferences of the electorate. Governments may lack knowledge on constituency views and interests, which in turn may decrease their chances for re-election. Civil society organizations could be closer to the grass roots and have local-level capacity (Bernhagen 2008: 85; Bloodgood 2011: 101; Vabulas 2011: 9), and thus have the ability to fill this gap. Hall and Deardorff (2006: 71) emphasize accordingly that ‘interest groups that enjoy comparative advantages [...] in obtaining private information about constituency views can use it to persuade legislators that electoral self-interest lies in taking group-friendly positions’ (see also Hansen 1991; Burstein and Hirsh 2007: 175).<sup>17</sup> Eventually, both mechanisms of providing information decrease state actors’ level of uncertainty about the consequences of their actions and also improve negotiators’ bargaining positions.

As a result, the literature contends that if governments are unable to collect this information themselves, they might approach civil society groups, which are involved in such policy research and offer such information, evaluation, and expertise (Princen 1994: 34ff; Raustiala 1997: 726f; Albin 1999: 377; see also Raustiala 2001; Hall and Deardorff 2006). Corell and Betsill (2001: 87)

---

<sup>17</sup> While this second mechanism primarily stems from the literature on lobbying in American politics, Bloodgood (2011) demonstrates that it applies to the context of civil society lobbying in global governance as well (see also Sell and Prakash 2004: 149).

agree in that ‘the provision of knowledge and information is the key resource for influence’ (see also Betsill and Corell 2008; Gerdung 2004). In exchange, meeting the requirements of civil society groups to participate in global environmental governance – or granting them access to national delegations as it is the focus of this research – might then be a relatively cheap cost for obtaining information (Albin 1999: 377). Vabulas (2011: 5) argues the same when pointing out that ‘many NGOs stand ready and waiting to provide expertise, because they also gain benefits from formal relations’ with states (see also Bloodgood 2011: 98). These benefits may entail ‘an increased organizational legitimacy’ or a ‘new forum for promoting their ideals,’ i.e., delegation membership (see also Betsill and Corell 2001: 74). In turn, states will have incentives to ‘establish formal relationships with NGOs in order to capitalize on [...] expertise’ (Vabulas 2011: 9).

The following chapter takes this argument as a starting point for a closer examination of the validity of this rationale within the UNFCCC and, specifically, with regard to civil society involvement in states’ negotiation delegations here. Previous research seems to merely assume that civil society generally has an information advantage over states, and that the latter will perceive this as beneficial. While this might be the case for developing countries that lack resources, it is not entirely plausible *ex-ante*, for example, that the information provision mechanism should work for developed countries. Burstein and Hirsh (2007: 178) similarly state that ‘theorists who highlight information provide enough evidence to make their hypotheses plausible [...], but no more.’ Hence, we still lack thorough empirical studies, which makes it difficult to infer systematic claims about the validity of the information provision mechanism in global environmental governance (Betsill and Corell 2001: 68; Betsill 2006: 185). The following study seeks to address this within the UNFCCC context.

Against this background, first, I present a theoretical framework that disaggregates the information provision rationale along factors that are likely to explain the demand-side, i.e., states’ incentives within the information provision nexus: a) the bureaucratic quality of a country, b) the salience of a negotiation issue, and c) a country’s regime type. I choose this strategy with a

focus on the demand side primarily because information provision as such cannot be examined or measured directly (see Kennan and Wilson 1993: 96; Sloof 1998: 248; Bernhagen 2012: 2). Also, states and their governments keep the prerogative to determine which civil society groups may participate, and existent approaches such as the Boomerang model ‘privilege the agency of NGOs and do not consider why states would sometimes institutionalize’ the relationship to civil society actors (Vabulas 2011: 1).<sup>18</sup> Based on my theoretical framework, I derive a set of testable hypotheses, which contend that if the information provision rationale applies in my context, civil society involvement will be more apparent in states’ negotiation delegations at the UNFCCC of those nations that have low bureaucratic quality, face a salient negotiation issue, or are more democratic. Afterwards, I test the theoretical rationale in a quantitative framework by using newly collected time–series cross–section data on the participation of civil society groups in state delegations in the UNFCCC regime for 1995–2004. In order to extend the scope of my research, I also examine civil society participation more closely by distinguishing between group types (i.e., environmental NGOs and business lobbying groups) and re–estimate the core models. In total, the results indicate that the information provision mechanism is unlikely to apply for civil society involvement in states’ UNFCCC delegations. I thus finish the chapter by providing alternative explanations, as well as with a comprehensive discussion of the avenues for future research.

---

<sup>18</sup> That being said, considering also supply–side arguments would arguably provide a more comprehensive picture. However, this is beyond the scope of this chapter and actually prevented due to data limitations. I will discuss this issue in the chapter’s conclusion again.

## 3.2 Disaggregating the Information Provision Mechanism:

### Theoretical Expectations

#### 3.2.1 *Bureaucratic Quality*

State delegations in international environmental negotiations are generally not comprised of politicians as such, but bureaucrats from ministries. One of the ‘core services’ of a bureaucracy is the ability to collect and manage information (Hendrix 2010: 274). Thus, if a government can rely on a high-quality administration that is capable of developing and disseminating information, this basically serves one fundamental purpose: information can effectively be gathered on specific environmental issues, which in turn decreases the uncertainty about possible consequences, and – due to the superior level of information – ultimately gives the governmental delegation a bargaining advantage in negotiations. This advantage can then be used to strike deals more effectively in the sense that they are closer to the delegation’s ideal policy position.

As a result, if the information provision mechanism holds true in my context, a high-quality state bureaucracy is unlikely to require the input of civil society actors at the UNFCCC, since it can fulfill the decisive task of information provision on its own.<sup>19</sup> On the other hand, we would expect higher demands for civil society in countries having a weak and low-quality bureaucracy. In this case, state officials are less likely to effectively gather and analyze the information, which is crucial for any bargaining process. Hence, rational thinking suggests that these governments then seek to ‘borrow’ information-disseminating capacity from other actors (see Habeeb 1988; Pfetsch and Landau 2000; Clark 1995: 597), which ultimately means that countries with a low-quality bureaucracy are likely to seek to compensate for this by including civil society actors in their delegations at the climate change regime (see also Steffek and Nanz 2007: 21). For example,

---

<sup>19</sup> In addition, a state having an effective bureaucracy would also try to avoid being constrained by other policy preferences that are then induced if civil society actors are allowed in its delegation (see Salamon and Anheiner 1991; Bratton 1990).

in the case of the UNFCCC, the Republic of Vanuatu – a small island nation located in the South Pacific – tends to appoint NGO representatives who are especially skilled in environmental law to its delegation (Mathews 1997: 55). This leads to the first hypothesis:

**Hypothesis 3.1:** If the information provision mechanism holds true in this context, the lower the bureaucratic quality of a country, the higher the civil society involvement in its negotiation delegation at the UNFCCC.

### 3.2.2 *Negotiation Issue Salience*

The information provision mechanism – and, in turn, countries’ willingness to consider non-governmental actors in their delegations at the UNFCCC – may also pertain to the degree to which a negotiation issue impinges upon a state’s best interests. Sprinz and Vaahutoranta (1994: 79) contend in the case of environmental quality that ‘the worse the state of the environment, the greater the incentives to reduce the ecological vulnerability of the state.’ In other words, the higher importance a given issue has for a country, the more likely it is that it seeks to ‘exploit’ any possibility for addressing this problem effectively (Clark 1995: 595). The inclusion of civil society actors in state delegations may provide such an opportunity if the information provision mechanism is valid: these groups function as comparably cheap information providers and experts with valuable knowledge that can further reduce uncertainty. As Wiser (1999: 4) puts it: where civil society has specific expertise, ‘its capabilities increase certainty.’ Ultimately, both mechanisms of the information provision argument as summarized in section 1 are likely to apply for issue salience.

Put differently, if subscribing to this argument, we should expect countries that perceive negotiation issues as more salient to be more likely to include non-state actors in their negotiation delegations, because they have an interest in obtaining more information for

improving their bargaining position (see Raustiala 1997; 2001; Yamin 2001; Gough and Shackley 2001; Esterling 2004; Stroup and Murdie 2013) and there is also greater public demand for more effective policies that adequately address the issue in question (see Hall and Deardorff 2006; Vabulas 2011). Conversely, states that perceive an issue to be of little importance are likely to face lower domestic audience costs, and will also have less incentives to incorporate civil society actors in their delegations as emphatically addressing such an issue through exhausting all possibilities is not perceived as necessary. This lack of demand and the rationale that civil society actors would then not contribute to the overall knowledge or bargaining position, but would instead impose restrictions on a negotiator's sovereignty and flexibility (Clark et al. 1998; see also Clark 1995; Stasavage 2004; Bloodgood 2011: 104), should make it less likely that non-governmental organizations are invited to join state delegations at the UNFCCC.

In sum, if states perceive civil society groups as effective information providers and the negotiation issue is highly salient, they are more likely to have strong incentives to make use of any information resource that seems promising in addressing a bargaining issue effectively. As a result, it is (also) more likely that these countries have even stronger incentives to satisfy the demands of their domestic audience:

**Hypothesis 3.2:** If the information provision mechanism holds true in this context, the higher the salience of the negotiation issue for a country, the higher the civil society involvement in its negotiation delegation at the UNFCCC.

### 3.2.3 *Regime Type*

The previous argumentation, in particular civil society's ability to provide information about the electorate's preferences, leads to the concept of accountability. Bueno de Mesquita, Smith, Siverson, and Morrow (2003) argue that the size of a leader's winning coalition and electorate



influence accountability, and that when leaders' level of accountability is higher, they are more likely to have strong incentives to avoid foreign policy failure (see also Bueno de Mesquita, Morrow, Siverson, and Smith 1999).<sup>20</sup> This incentive is driven by a leader's primary goal of retaining office. The size of both the electorate and the winning coalition is generally larger in democracies than autocratic regimes.

If the information provision mechanism does hold in my research context, there are at least two ways that make it more likely that democratic, i.e., more accountable, countries have a higher involvement of civil society actors in their delegations. First, the core of Bueno de Mesquita et al.'s (1999; 2003) theory contends that more accountable regimes have a higher interest in avoiding foreign policy failure and achieving public policy success due to the rationale of staying in power. Similar to the argument on the salience of an issue, this suggests that the higher the accountability/level of democracy of a regime, the more likely its delegation will tap into any possible assistance for achieving bargaining success. Civil society actors provide information, expertise, and evaluations that can reduce uncertainty significantly, and can thus increase the chances of achieving negotiation outcomes that are closer to the ideal policy position of a delegation (see also Bernhagen 2012: 3).

Second, the winning coalition, as the crucial part of a country's electorate, will also seek to be informed about foreign policy success and failure in order to be able to reward or punish a leader afterwards. Important here are independent mass media, NGOs, and also business lobbying groups or firms, which are more active in democratic regimes and have more opportunities to provide information to the public audience. In turn, this information provision – facilitated by civil liberties such as freedom of speech or press freedom in democracies (see Bättig and Bernauer 2009; Payne 1995) – enables citizens to be better informed by non-governmental actors about state policies and international negotiations and to freely express their opinions about these issues (see Lateef 1992). Citizens can then impose higher audience costs on policymakers who

---

<sup>20</sup> For my purposes, foreign policy failure constitutes bargaining failure or not addressing a negotiation issue properly.

renege on electoral promises (Slantchev 2006; see also Hansen 1991; Hall and Deardorff 2006; Burstein and Hirsh 2007; Bloodgood 2011; Vabulas 2011).

In short, the winning coalition, which is likely to demand the inclusion of civil society groups in UNFCCC negotiations, is larger in democracies than in autocracies. Democratic elites seek to satisfy this out of the compulsion to stay in office. Due to the exact same rationale, the government itself will seek to consider civil society participation because of its information provision and expertise. Ultimately, we should expect a higher level of non-governmental activity in more democratic state delegations:

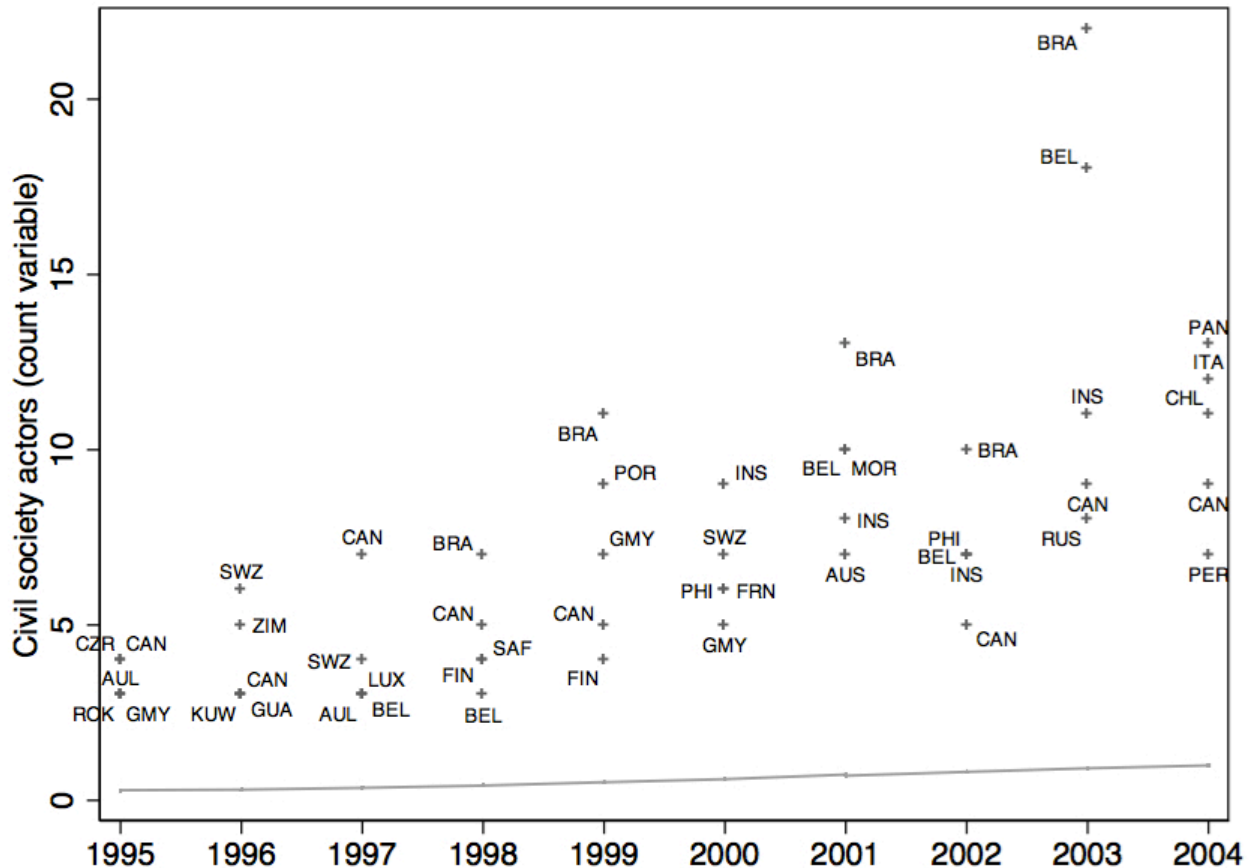
**Hypothesis 3.3:** If the information provision mechanism holds true in this context, the more democratic a country is, the higher the civil society involvement in its negotiation delegation at the UNFCCC.

### **3.3 Research Design**

#### *3.3.1 Data*

For empirically testing the validity of the information provision mechanism and the derived hypotheses in the context of states' delegations at the UNFCCC, I operationalize civil society involvement using newly coded data on countries' delegation membership composition during the climate change negotiations. More specifically, my data collection efforts focused on the participation of civil society actors in states' official delegations for the Conferences of the Parties (CoPs) of the UNFCCC. Here, and in consistence with my treatment in the introduction above, civil society groups are defined as NGOs, business groups, firms, companies, etc., i.e., essentially all actors involved in a state delegation that do not belong to official entities such as

governments, embassies, or inter-governmental organizations (Arts 2005; Steffek and Nanz 2007; see also Castiglione 1998; Keck and Sikkink 1998). This approach consequently excludes ‘government-oriented NGOs’ that receive funds from or are under the control of official state organizations, and treats pro-environment organizations and actors such as business lobbying groups equally.<sup>21</sup>



**Fig. 3.1** Median Band with ‘Top-5’ Countries of Civil Society Participation at the UNFCCC, 1995–2004

*Note:* Solid line signifies median band. Crosses list ‘top-5’ country-delegations in civil society participation per year. Country abbreviations follow Correlates of War project (Singer 1988)

The monadic data cover the time period 1995–2004, i.e., all CoPs until the end of 2004, while the unit of analysis is the delegation-year for a specific CoP.<sup>22</sup> I consulted the UNFCCC

<sup>21</sup> The information provision rationale does not explicitly make a distinction between those different groups (see Burstein and Hirsh 2007: 183). However, my data allow distinguishing between them. I will return to this issue below when re-estimating the models for ‘disaggregated’ civil society actors.

<sup>22</sup> Data collection started with the first CoP in Berlin 1995 and ended with the 17<sup>th</sup> CoP in Durban 2011. However, the succeeding analysis only covers the period 1995–2004, since I lack data for some explanatory variables after 2004.

website<sup>23</sup> for the CoP participants in order to obtain the data, and all corresponding documents essentially follow the same structure: a) list of parties (i.e., state delegations and participants – either official or civil society representatives – therein); b) observer states; c) UN bodies; d) IGOs; e) observer organizations. For this project, the category of primary interest is a), and those delegations were coded along civil society participation. For the vast majority of actors, it could clearly be identified whether they belong to governmental bodies or to civil society groups (and, accordingly, to which civil society organization). If this was not possible, however, those cases were set as missing and, hence, drop out of the analysis.<sup>24</sup>

These new data may allow the examination of various issues in the context of UNFCCC negotiations that simply could not be addressed via existing data sources. Thus, before coming to the actual empirical analysis, some descriptive patterns are demonstrated that – although arguably suggestive – emphasize how the data bear considerable promise in opening up new avenues for further research on international negotiation dynamics. Figure 3.1 shows that the yearly average level of civil society inclusion in countries' negotiation delegations is fairly consistent over time. More specifically, the figure includes the median band of a count variable measuring the number of non-governmental actors in each delegation between 1995 and 2004. Taking some minor deviations into account, this band ranges in the interval [0.4; 1.2]. Figure 3.1 also comprises the 'top-5' countries in terms of civil society inclusion within their delegations. Although thorough claims are not made at this point, the figure might offer some preliminary support for the validity of the information provision mechanism in the context of UNFCCC state delegations as, e.g., the vast majority of the countries with very high levels of civil society participation are seen as democratic in the time period under study.

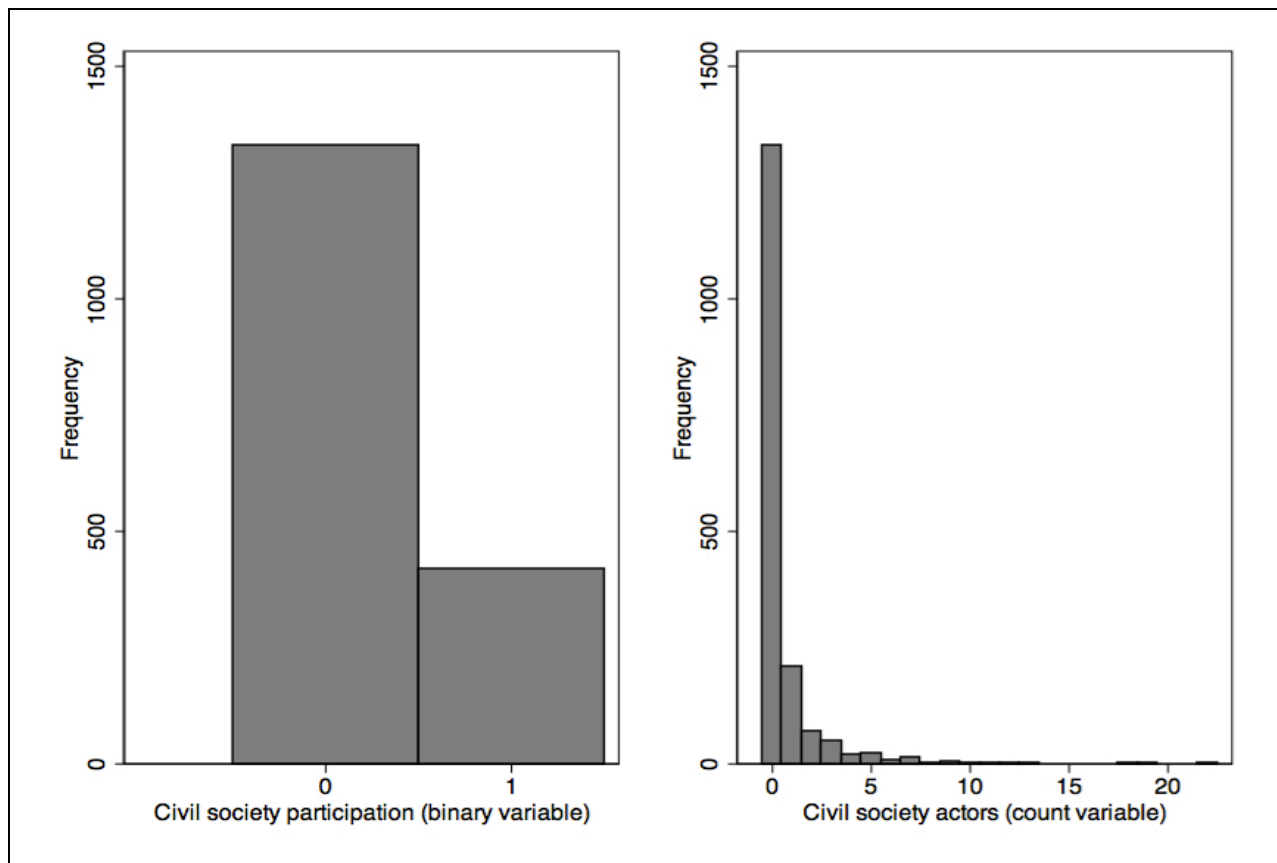
---

<sup>23</sup>[http://unfccc.int/documentation/documents/advanced\\_search/items/3594.php?such=j&keywords=%22conference%20reports%22&meeting=%22%28COP%29%22#beg](http://unfccc.int/documentation/documents/advanced_search/items/3594.php?such=j&keywords=%22conference%20reports%22&meeting=%22%28COP%29%22#beg).

<sup>24</sup> Missing values comprise only 0.57% and 0.97% for the binary dependent variable and the count item, respectively.

### 3.3.2 *Dependent Variables and Methodology*

My research focuses on information provision from civil society groups and how this is related to states' decisions to consider these actors for their delegations at the UNFCCC. A simple dichotomous item is therefore employed for whether national delegations see any civil society participation (1) or not (0) for the first model estimations, and then a count variable measuring the number of any non-governmental actors in each delegation. For example, the total size of the Canadian delegation to the first CoP in 1995 was comprised of 27 delegates, with four of them belonged to civil society groups.<sup>25</sup> The binary variable therefore receives a value of 1, and the count item is coded as 4 here.



**Fig. 3.2** Histograms of *Civil Society Participation* and *Civil Society Actors*

<sup>25</sup> In more detail, these groups were a) the Sierra Club of Canada, b) the Pembina Institute, c) the Canadian Association of Petroleum Producers, and d) the Canadian Electrical Association.

The dichotomous nature of the first dependent variable suggests a logit/probit setup while a Poisson/negative binomial estimator might seem sufficient for modeling the variance in the second dependent item. Figure 2 emphasizes, however, that both civil society participation and the count item civil society actors are characterized by a huge over-dispersion of zeros: about 75% of observations do not include civil society actors in their delegations. Regular models would then overestimate the probability and frequency of the ‘non-zero events,’ which motivates the use of a rare-events logit (King and Zeng 2001a; 2001b) for the first calculations and a zero-inflated negative binomial regression (Long 1997: 244)<sup>26</sup> thereafter. I also employ robust standard errors clustered on country to account for intra-group correlations, and model existing temporal dependencies by including a ‘civil-society-years variable’ and different sets of cubic splines (Beck, Katz, and Tucker 1998). This approach acknowledges that a country’s consideration of civil society actors might depend on its delegation composition in previous years.

### 3.3.3 *Explanatory Variables and Control Items*

I disaggregated the information provision mechanism along three factors. The first focuses on the quality of a country’s bureaucracy, for which the Political Risk Services Group’s (PRSG) International Country Risk Guide (Howell 2012) is employed. These data comprise one variable that – based upon expert assessments – measures the bureaucratic quality of a country on a 0–4 scale, with higher values standing for more effective bureaucratic capacities. More specifically, ‘high points are given to countries where the bureaucracy has the strength and expertise to govern without drastic changes in policy or interruptions in government services.’ Here, ‘the bureaucracy tends to [...] have an established mechanism for recruitment and training. Countries that lack the cushioning effect of a strong bureaucracy receive low points because a change in government

---

<sup>26</sup> The Vuong test demonstrates that the zero-inflated version is superior to the standard negative binomial regression model. Furthermore, a likelihood ratio test compared the zero-inflated negative binomial model with a zero-inflated Poisson regression, and indicates that the former estimator is more suitable.

tends to be traumatic in terms of policy formulation and day-to-day administrative functions' (Howell 2012: 7; see also Hendrix 2010).

The second factor pertains to the salience of an issue. In the context of the UNFCCC, countries' willingness to include civil society actors in their negotiation delegations should reflect the degree to which they are vulnerable to climate change and global warming. Following recent research (Mendelsohn, Dinar, and Williams 2006; Srinivasan 2010), I operationalize salience by geographical location and income. With regard to the first item, a dichotomous variable is applied for members of the Alliance of Small Island States (AOSIS), since countries belonging to this organization are especially threatened by the effects of climate change and global warming (Fredriksson and Ujhelyi 2005: 19) and the vast majority are simultaneously relatively poor and underdeveloped nations, i.e., they may lack the necessary resources for obtaining information needed in UNFCCC negotiations. Under these circumstances, there could be incentives for 'borrowing' resources, expertise, and other skills from non-governmental groups (Betzold 2010). If the information provision mechanism holds true, we would expect that this variable has a positive impact on the participation of civil society groups in national delegations.

With regard to the second salience item, I measure income by *GDP per capita* using extended data based on Gleditsch (2002) that contain information until 2004. I use a logged version of this variable to account for its skewed distribution. Note that this item is highly correlated with the other explanatory factors,<sup>27</sup> so to avoid problems with multicollinearity, I standardize the logged *Salience – Income*.

The third information provision hypothesis claims that more accountable, i.e., democratic countries are more likely to have more civil society actors in their delegations. Therefore, the *Polity2* variable from the Polity IV project (Marshall and Jaggers 2004) is employed, which

---

<sup>27</sup> The pairwise correlations range in [0.32; 0.79].

ranges from -10 (full autocracy) to +10 (full democracy). Since these data omit values of microstates, I impute missing information with data taken from Gleditsch (2008).<sup>28</sup>

Other factors that may influence the dependent variable must also be controlled for in order to avoid potential omitted variable bias. Furthermore, including alternative determinants of negotiations' civil society participation also addresses possible selection effects, since only certain types of delegations are likely to see the participation of civil society. First, it may be the case that the strength of a country's civil society is a key influence as well (see e.g., Kau and Rubin 1982).<sup>29</sup> A strong civil society may be able to establish leverage over governments (see Binder and Neumayer 2005: 530), which may be used to push them toward granting civil society access to negotiation delegations, even in the absence of strong governmental incentives for doing so in the first place. I operationalize the level of civil society strength by the number of (inter-) national environmental NGOs (ENGOS) registered in each country using data from the World Environment Encyclopedia and Directory (Europa Publications 1994; 1997; 2001).<sup>30</sup> These data, however, suffer a great deal from missing values. They omit a number of NGOs in several countries and do not include non-governmental groups that may have been active in the time period of concern, but ceased to exist before publication of the Directory (Binder and Neumayer 2005: 531). Hence, for country-years that do not have information on ENGOS from the Directory, I obtained data from Bernauer, Böhmelt, and Koubi (2013) who compiled ENGO data from the International Union for Conservation of Nature (IUCN). Also, Binder and Neumayer (2005) collected data on ENGOS themselves, which are incorporated as well. Finally,

---

<sup>28</sup> Alternatively, I considered the W/S measure from Bueno de Mesquita et al. (2003) in unreported models. However, this does not affect my results.

<sup>29</sup> Kau and Rubin (1982) primarily argue that the number of non-governmental groups represents the strength of a civil society. Riddel (2003), on the other hand, contends that the amount of financial resources available also influences this. Due to the lack of data, however, I focus on the number of groups.

<sup>30</sup> Due to the lack of data, the strength of all civil society is thus assumed to be 'symmetrically' mirrored by the number of environmental organizations in a country: both 'environmental-friendly' organizations and business groups are assumed to be equal in size and, hence, it is sufficient to consider the former variable only (Bernhagen 2008: 94; Binder and Neumayer 2005: 535). Furthermore, a possible objection to this operationalization is that fewer groups represent a stronger civil society in the sense of being more concentrated and, hence, more able to exert political pressure. I will return to this collective action argument when interpreting my findings.



the remaining missing data were addressed with linear imputation techniques suggested in Gleditsch (2002; also Honaker and King 2010).<sup>31</sup>

Moreover, state delegations vary significantly in the number of involved delegation members. For example, the mean delegation size of the U.S. is about 71, while the Bahamas sent only two delegates to the CoPs on average. Since large countries are more likely to have larger delegations, I consider the logged version of a population variable (Gleditsch 2002) to control for these different scales. Similarly, albeit different, big and ‘important’ countries should be less willing than small ones to include civil society representatives in their delegations (see Neumayer 2002: 150). The former are generally better able to provide necessary staff and resources for international negotiations and are, in turn, even more reluctant to constrain themselves by additional policy preferences that may be induced by considering non-state groups for their delegations (see Roberts, Parks, and Vásquez 2004: 25). A dichotomous major power variable is employed from the Correlates of War project (Singer 1988).

Table 3.1 summarizes the basic information of the variables of interest. Note that the variation inflation factors (VIFs) demonstrate that the explanatory factors do not suffer from multicollinearity. In other words – and perhaps contrary to initial expectations – there is not much overlap between, for example, the highest performing bureaucracies and democratic regimes.

**Table 3.1** Basic Information of Variables

Variable	Obs	Mean	SD	Min	Max	VIF
Civil Society Participation	1750	0.240	0.427	0	1	—
Civil Society Actors	1742	0.613	1.703	0	22	—
Bureaucratic Quality	1357	2.279	1.134	0	4	1.40
Salience – Income	1813	0	0.950	–2.215	2.884	1.00
Salience – AOSIS Membership	1794	0.184	0.388	0	1	1.14
Democracy	1621	3.849	6.672	–10	10	1.30
Civil Society Strength	1753	12.100	27.909	0	261	1.78
Population	1814	8.628	2.073	2.932	14.074	1.44
Major Power	1884	0.041	0.198	0	1	1.65

<sup>31</sup> Due to these techniques, the remaining amount of missing data on *Civil Society Strength* comprises 6.37% only.

### 3.4 Empirical Core Findings

First, I present the rare-events logit model (Table 3.2).<sup>32</sup> To further assess the implied magnitude of my findings, Table 3.3 summarizes the predicted probability of seeing civil society participation in a UNFCCC delegation for the minimum and the maximum value of each explanatory measure while holding all other variables at their means (or modes for dichotomous variables).<sup>33</sup>

Before moving to the core explanatory variables, I briefly discuss the control variables. First, the most unexpected finding stems from *Civil Society Strength*, which has a negative estimated effect (significant at 5%), although the overall impact is rather small. One explanation, based upon a simple collective action argument, may be plausible in explaining this finding. Larger groups are more difficult and more costly to organize (Buchanan and Tullock 1962; Olson 1965; Chamberlain 1974) and organizational costs increase with group size, especially via actors' preferences. The larger a group of civil society actors trying to participate in state delegations, the more likely it is afterwards that a state delegation is characterized by greater heterogeneity of interests (see Snidal 1994). In turn, more civil society actors could make it more difficult, both for governmental actors and civil society groups, to reach any agreement on the participation of civil society actors in UNFCCC negotiation delegations in the first place (Bernauer et al. 2013; see also Clark 1995: 598). Furthermore, *Major Power* does not seem to determine whether countries include non-governmental actors in their UNFCCC delegations or not. Different model specifications do not alter this result, while excluding this variable from the calculations has no

---

<sup>32</sup> In order to ensure the robustness of these findings, I changed a variety of model specifications and re-run the estimations for both the rare-events logit and the zero-inflated negative binomial models again. First, the dichotomous variable on major power status might undercut the significance and size of the bureaucratic quality and salience variables. Hence, unreported models do not include this control, but the results essentially do not depend on whether the major power variable is considered or not. Second, the strength of a country's civil society incorporates information that was obtained through imputation techniques. These techniques may introduce noteworthy problems, however, since, for example, values are unlikely to be missing at random. To consider this, all models were estimated again, relying only on those observations that were directly observed by the IUCN and/or the Directory only. Again, the core results stay the same.

<sup>33</sup> The predicted probabilities were computed via a Bayesian approach, using the entire probability distribution of a variable's coefficient to approximate the expected value of  $Pr(Y=1/x)$ , without conditioning on the point estimate of the coefficient. The confidence intervals were estimated via simulations ( $N=10,000$ ).

crucial impact on the other variables either. The item on a country's population has the expected positive sign and is highly significant, though. The larger the population of a state, the more likely it is that civil society is part of its negotiation delegation.

**Table 3.2** Civil Society Participation in UNFCCC National Delegations, 1995–2004

	Model 3.1	Model 3.2	Model 3.3	Model 3.4
Bureaucratic Quality	0.282 (0.104)***	0.227 (0.102)**	0.352 (0.107)***	0.308 (0.104)***
Salience – Income	0.507 (0.068)***		0.491 (0.072)***	
Salience – AOSIS Membership		–1.630 (0.440)***		–1.182 (0.429)***
Democracy	0.030 (0.018)*	0.044 (0.019)**	0.041 (0.019)**	0.050 (0.020)**
Civil Society Strength			–0.006 (0.003)**	–0.006 (0.003)**
Population			0.326 (0.071)***	0.282 (0.073)***
Major Power			0.125 (0.449)	–0.005 (0.421)
Years	–1.110 (0.157)***	–1.136 (0.154)***	–1.036 (0.157)***	–1.084 (0.155)***
Spline 1	–0.010 (0.013)	–0.011 (0.013)	–0.008 (0.013)	–0.010 (0.013)
Spline 2	–0.101 (0.034)***	–0.111 (0.034)***	–0.096 (0.035)***	–0.106 (0.034)***
Spline 3	0.086 (0.058)	0.094 (0.058)	0.080 (0.058)	0.087 (0.057)
Constant	–0.705 (0.250)***	–0.636 (0.247)***	–3.995 (0.754)***	–3.498 (0.764)***
Obs	1248	1226	1229	1207
Wald $\chi^2$	159.28***	125.09***	175.36***	144.73***

Rare–events logit regression. Standard errors in parentheses and clustered on country

\* significant at 0.1 level, \*\* at 0.05 level, \*\*\* at 0.01 level (two–tailed)

With regard to the core explanatory variables, Tables 3.2 and 3.3 entertain some doubt on the validity of the information provision mechanism for civil society participation in states' UNFCCC delegations. In terms of the first factor, especially those countries with low bureaucratic capacity should be more likely to include civil society actors in their delegations as the lack of resources might be addressed by borrowing power from non–governmental actors. Tables 3.2 and 3.3 demonstrate, however, that this is unlikely to apply. The marginal impact of a

one standard deviation change in *Bureaucratic Quality* increases the likelihood of non-governmental actors in national delegations by about 0.29 standard-deviation units on average. More substantially, the probability of seeing civil society participation is about 15.78% when *Bureaucratic Quality* is held at its minimum, while it increases to 37.15% if this item is raised to its maximum. In other words, states with higher bureaucratic quality – i.e., countries that have the resources to acquire and analyze information effectively – are actually more likely to include non-state groups in their UNFCCC delegations than those states that lack bureaucratic expertise. Consequently, in this context, the primary incentive for these states cannot be information provision and the expertise of civil society.

**Table 3.3** Civil Society Participation in UNFCCC Delegations: Predicted Probabilities

	Model 3.1		Model 3.2		Model 3.3		Model 3.4	
	Min	Max	Min	Max	Min	Max	Min	Max
Bureaucratic Quality	15.50%	35.90%	18.60%	35.90%	13.40%	38.40%	15.60%	38.40%
Salience – Income	10.30%	59.90%			10.60%	58.70%		
Salience – AOSIS Membership			27.70%	7.50%			27.20%	10.90%
Democracy	18.80%	29.30%	17.30%	32.90%	16.60%	30.30%	15.80%	32.90%
Civil Society Strength					27.90%	8.80%	29.20%	8.80%
Population					9.60%	61.70%	11.90%	58.50%
Major Power					25.90%	29.20%	27.20%	27.80%

Predicted probabilities of *Civil Society Participation* are shown for each independent variable when moving from the minimum to the maximum. All other variables held at their mean values (or modes for dichotomous variables)

Second, the impact of an issue's salience does also not support the information argument for my research focus. The less important a country perceives the negotiation issue – either measured by high state income levels or non-membership in AOSIS – the higher the chances that non-governmental actors will be included in state delegations. When moving toward the highest value of *Salience – Income*, for example, the predicted probability increases on average to 59.3%. This is an impressive change given the low baseline probability of about 10% at the minimum of this variable. Similarly, AOSIS members have a significantly lower probability (9.2% on average) than non-AOSIS states (27.45%) of having civil society aboard their delegations. In sum then, particularly those countries that would be expected to exploit any information resource available

due to a salient negotiation issue are much less prone to consider civil society actors in their UNFCCC negotiation delegations. As a result, other mechanisms than the information provision of civil society must be at work here.

Coming to the regime type of states, *Democracy* has a positive and significant sign. The predicted probability for the onset of civil society participation increases by about 14.2% points when we move from the lowest to the highest value of *Democracy*. Put differently, a country's incentives to consider the inclusion of civil society in its national delegation is likely to be higher in democracies as these kinds of regimes are more accountable to their winning coalitions. Hence, this result actually seems to support the information provision argument for civil society access to states' UNFCCC delegations. However, doubts are raised against this conclusion when examining the involvement more thoroughly via the zero-inflated negative binomial regression in Table 3.4.

More specifically, the results of the second stage in Table 3.4 essentially mirror the findings from Tables 3.2 and 3.3 above. High-quality bureaucracies not only increase the likelihood of civil society representatives' participation in national delegations, but also their number. Further, high-income countries and non-members of the AOSIS group have a significantly higher number of non-state actors in their delegations. Finally, the expected change in *Civil Society Actors* (log) for a one-unit increase in *Democracy* is 0.022 on average. At first sight, this seems to be consistent with the information provision claim and the findings from above. Note, however, that *Democracy* is insignificant in the second stage of Table 3.4, while it is the only substantive variable in the first stage. Therefore, *Democracy* essentially derives its explanatory power in Tables 3.2 and 3.3 from predicting the excessive amount of zeros in the data. In other words, it seems unreasonable to uphold the third hypothesis as true and that this provides support for the information provision mechanism within the context of states' UNFCCC delegations, since these findings and especially Table 3.4 only demonstrate that democracies are less likely *not* to consider civil society actors in their negotiation delegations. I believe, however, that this points to

an avenue of alternative explanations other than the validity of the information provision argument for civil society involvement in state delegations at the climate change regime.

**Table 3.4** The Number of Civil Society Actors in UNFCCC National Delegations, 1995–2004

	Model 3.5	Model 3.6	Model 3.7	Model 3.8
Bureaucratic Quality	0.362 (0.150)**	0.296 (0.149)**	0.549 (0.123)***	0.499 (0.130)***
Salience – Income	0.425 (0.083)***		0.346 (0.109)***	
Salience – AOSIS Membership		–1.781 (0.377)***		–0.965 (0.416)**
Democracy	0.011 (0.027)	0.025 (0.029)	0.020 (0.024)	0.030 (0.026)
Civil society Strength			–0.010 (0.004)**	–0.010 (0.006)*
Population			0.419 (0.119)***	0.422 (0.103)***
Major Power			–0.617 (0.459)	–0.650 (0.540)
Constant (Count)	–0.768 (0.395)*	–0.575 (0.391)	–5.243 (1.151)***	–5.129 (1.049)***
Bureaucratic Quality	0.166 (0.230)	0.115 (0.233)	0.387 (0.258)	0.309 (0.267)
Salience – Income	–0.232 (0.257)		–0.352 (0.311)	
Salience – AOSIS Membership		0.746 (0.629)		0.908 (0.711)
Democracy	–0.086 (0.037)**	–0.086 (0.038)**	–0.083 (0.041)**	–0.089 (0.040)**
Civil Society Strength			–0.019 (0.024)	–0.009 (0.025)
Population			0.042 (0.154)	0.092 (0.145)
Major Power			–1.092 (0.679)	–0.984 (0.831)
Years	2.254 (0.297)***	2.228 (0.268)***	2.106 (0.411)***	2.208 (0.307)***
Spline 1	0.015 (0.015)	0.017 (0.016)	0.013 (0.017)	0.016 (0.018)
Spline 2	0.201 (0.050)***	0.209 (0.050)***	0.192 (0.059)***	0.210 (0.054)***
Spline 3	–0.154 (0.073)**	–0.165 (0.075)**	–0.146 (0.082)*	–0.162 (0.081)**
Constant (Inflation)	–2.769 (0.772)***	–2.520 (0.697)***	–3.402 (1.482)**	–3.820 (1.593)**
Obs	1240	1218	1221	1199
Log Pseudo Likelihood	–1241.299	–1214.664	–1190.025	–1168.779
Wald $\chi^2$	40.68***	50.60***	72.20***	55.63***

Zero-inflated negative binomial regression. Standard errors in parentheses and clustered on country

\* significant at 0.1 level, \*\* at 0.05 level, \*\*\* at 0.01 level (two-tailed)

### 3.5 Extending the Scope: ENGOs vs. Business Lobbying Groups

As stated, the existing literature on the information provision rationale does essentially not distinguish between different kinds of civil society actors. In other words, and from the demand-side perspective, governments place little importance on the actual source of information (see Sell and Prakash 2004) as long as they receive information that decreases uncertainty and improves their bargaining position (see Burstein and Hirsh 2007: 183). In turn, this source, whoever it may be, might request and be granted access to the negotiation table. Thus, the previous analyses, which cast doubt on the validity of the information provision logic for civil society participation in states' UNFCCC delegations, do not distinguish between, e.g., ENGOs and business lobbying groups. However, it seems plausible that it is worth extending the original information provision theory by making this distinction (e.g., Gulbrandsen 2008: 100; Bernhagen 2012: 3, 16; see also Sell and Prakash 2004). For example, Keck and Sikkink (1998: 2) contrast business lobbying groups with other advocacy organizations in that the latter 'are motivated by values rather than material concerns.'<sup>34</sup> Accordingly, in this section I disaggregate civil society participation along these two crucially different and mutually exclusive non-governmental types: ENGOs and business lobbying organizations.

In more detail, I theoretically justify this approach along the following lines. First, governments may be more likely to seek information from and give access to like-minded civil society groups. For instance, Hall and Deardorff (2006: 76) study lobbying efforts in the U.S. Congress and conclude that 'legislators will be lobbied by like-minded public interest groups,' precisely due to the reason that their information provision helps in re-assessing and confirming own policy positions or re-election efforts. From a different perspective, i.e., the supply side, this is also in the interest of civil society groups as they compete for access (Gulbrandsen 2008; Sell

---

<sup>34</sup> Similarly, Sell and Prakash (2004: 168) state that 'firms are a category of institutions that seek to generate (perhaps even maximize) profits and in which shareholders are the ultimate claimants of this residual. On the other hand, NGOs do not seek to generate such residuals.'

and Prakash 2004: 145f), while preferring to lobby their allies (e.g., Brownars and Lott 1997; Albin 1999: 377; Baumgartner and Leech 2001; Bloodgood 2011: 100). If subscribing to this argument, ‘environmental-friendly’ states are more likely to seek information from and grant access to ENGOs, while laggard states in the UNFCCC may be more sympathetic toward business lobbying groups. This is in line with what Gulbrandsen (2008: 102) calls the ‘political-institutional approach.’ According to this, we would expect more stringent environmental regulations by a country ‘in which environmental stakeholders had wider access to the science-policy dialogue.’ Hence, Gulbrandsen (2008: 102) calls for the examination of a ‘broad range’ of interest groups and stakeholders in order to achieve a more thorough understanding.

Second, however, this reasoning relies on the assumption that business lobbying groups generally prefer less environmental regulation over stricter rules. While it may be that ‘stronger’ environmental laws in general and deeper commitments in the UNFCCC in particular create opportunities for business, Bernhagen (2008: 83) points out that ‘such cases are rather rare.’ According to Dryzek (2000: 142), ‘policies that damage business profitability – or are even perceived as likely to damage that profitability – are automatically punished by the recoil of the market.’ Hence, business lobbying groups indeed prefer less environmental regulation and, in fact, they ‘attempt to wield political influence by affecting policy-makers’ beliefs about the consequences of policy’ (Bernhagen 2008: 85; see also Sell and Prakash 2004: 150).<sup>35</sup>

To recap, it seems plausible to further disaggregate the preceding analyses along different kinds of civil society actors, since these represent diverse interests and preferences both at the demand and supply side. If lumped together, the proclaimed effects may cancel each other out, leading to biased estimates and the false conclusion that the information provision rationale does not apply for states’ delegations and civil society participation therein at the UNFCCC. Therefore, I now disaggregate the data described above in order to create two new count variables. While the first item counts the number of ENGOs in a state’s UNFCCC negotiation delegation, the second

---

<sup>35</sup> Ultimately, business lobbying organizations may even exaggerate predictions and information about the costs of UNFCCC regulations exclusively to obtain access to state delegations (see Bernhagen 2008: 86).



counts the number of business lobbying groups therein. These different kinds of non-governmental organizations were identified by the mission statement and/or by stated interests of each organization.<sup>36</sup> Based upon these new measures, I re-estimate the core models (Models 3.7 and 3.8) again. Given the theoretical rationale in this section, I expect that issue salience and democracy have a positive impact on the number of ENGOs in their delegation (and a negative effect on the count of business lobbying groups) if the information provision holds for the UNFCCC, while the sign for the bureaucratic quality measure is somewhat unclear: both high-quality and low-quality bureaucracies (and their governments) could be sympathetic toward either kind of civil society organization. It, thus, remains an empirical question that has to be addressed. The results are summarized in Table 3.5.

Two findings evolve as particularly striking. First, the coefficients, their size, and their significance levels in Models 3.9–3.10 are virtually identical to Table 3.4. Second, however, most variables and actually all core explanatory items lose their predictive power in Models 3.11–3.12, i.e., those estimations that solely focus on business lobbying groups. In other words, this additional analysis provides further support that we must reject the rationale of the information provision argument for the inclusion of ENGOs in states' delegations at the UNFCCC. That being said, my findings remain inconclusive in terms of those civil society groups that represent business interests. The information provision logic then may or may not work for these types of civil society organizations within the UNFCCC for states' negotiation delegations. Either way, nevertheless, it seems more likely, even when employing a disaggregated analysis of civil society group type that alternative mechanisms are at work when studying countries' behavior toward civil society actors in their delegations at the climate change regime. I will address these in the following section.

---

<sup>36</sup> Generally, this information could be retrieved from the respective website of each organization. If it remained unclear whether a civil society group was either 'pro-environment' or represented business interests, it was dropped from the data, however.

**Table 3.5** Environment vs. Business Lobbying Groups in UNFCCC Delegations, 1995–2004

	Model 3.9 (Environment)	Model 3.10 (Environment)	Model 3.11 (Business)	Model 3.12 (Business)
Bureaucratic Quality	0.602 (0.123)***	0.551 (0.141)***	0.373 (0.533)	0.381 (0.531)
Salience – Income	0.409 (0.091)***		0.199 (0.202)	
Salience – AOSIS Membership		–0.829 (0.338)**		–2.521 (2.400)
Democracy	–0.006 (0.019)	0.002 (0.019)	0.045 (0.058)	0.046 (0.065)
Civil Society Strength	–0.010 (0.004)***	–0.009 (0.010)	–0.017 (0.011)	–0.020 (0.011)*
Population	0.360 (0.096)***	0.403 (0.083)***	0.532 (0.351)	0.522 (0.364)
Major Power	–0.320 (0.461)	–0.766 (0.434)*	–0.223 (1.314)	0.217 (1.118)
Constant (Count)	–5.058 (0.975)***	–5.265 (0.885)***	–6.198 (5.141)	–6.049 (5.433)
Bureaucratic Quality	0.492 (0.266)*	0.361 (0.406)	0.033 (0.814)	0.039 (0.813)
Salience – Income	–0.161 (0.376)		–0.352 (0.251)	
Salience – AOSIS Membership		0.711 (0.621)		–1.188 (3.175)
Democracy	–0.108 (0.044)**	–0.106 (0.040)***	–0.068 (0.055)	–0.077 (0.069)
Civil Society Strength	–0.022 (0.021)	–0.005 (0.056)	–0.060 (0.046)	–0.071 (0.079)
Population	–0.051 (0.146)	0.059 (0.162)	0.287 (0.562)	0.308 (0.633)
Major Power	–0.913 (0.684)	–1.281 (0.727)*	2.465 (1.517)	1.710 (1.547)
Years	2.291 (0.505)***	2.141 (0.406)***	1.451 (0.476)***	1.591 (0.470)***
Spline 1	0.020 (0.018)	0.022 (0.018)	–0.120 (0.193)	–0.108 (0.158)
Spline 2	0.213 (0.068)***	0.210 (0.066)***	0.081 (0.116)	0.108 (0.121)
Spline 3	–0.179 (0.089)**	–0.182 (0.089)**	0.253 (0.523)	0.209 (0.467)
Constant (Inflation)	–3.085 (1.433)**	–3.514 (2.037)*	–1.408 (1.738)	–1.517 (8.373)
Obs	1217	1195	1217	1195
Log Pseudo Likelihood	–994.704	–977.327	–500.625	–495.113
Wald $\chi^2$	85.34***	67.50***	19.65***	33.18***

Zero-inflated negative binomial regression. Standard errors in parentheses and clustered on country

\* significant at 0.1 level, \*\* at 0.05 level, \*\*\* at 0.01 level (two-tailed)

### 3.6 Conclusion

The previous literature *inter alia* argues that civil society's provision of knowledge and information can create incentives for states to grant these actors access to international environmental negotiations. A theoretical framework has been presented that disaggregates the information provision rationale from a state perspective along the bureaucratic quality of a country, the salience of the negotiation issue, and regime type. In one of the first quantitative studies to examine this, I then analyzed newly collected data on state delegations in the UNFCCC from 1995 to 2004.

The results indicate that the information provision mechanism is unlikely to apply in the case of UNFCCC state delegations: the consideration of civil society inclusion does not appear to be rational searches for maximally effective information that will help delegations achieve desirable negotiation outcomes. In fact, states that are most likely to consider civil society actors for their delegations are those that can rely on a high-quality bureaucracy and do not perceive an issue as salient, and thus are least in need of expertise and information provision. In terms of democracies, although Tables 3.2 and 3.3 seemed to initially support the information provision claim for the UNFCCC context, the results from the zero-inflated negative binomial regression highly question its validity and actually point to alternative explanations. An additional analysis that distinguished between ENGOs and business lobbying groups in states' UNFCCC delegations did not question this conclusion.

More specifically, it appears more reasonable that democracies will consider civil society participation, since they are used to consulting with organized non-governmental groups at a domestic level anyway (see Bernauer et al. 2013). At an international level, democracies simply follow this principle. Similarly, democracies might want to include non-state actors in their negotiation delegations to fend off civil society criticism and to increase their ability to 'sell' international negotiation outcomes to domestic audiences (see e.g., Stasavage 2004). Also, civil

society actors can enhance political responsiveness and democratic accountability (Fox and Brown 1998) by signaling to domestic audiences that states credibly commit to climate change commitments (Vabulas 2011; Grigorescu 2007; see also Simmons and Danner 2010). Although there is increasingly the perception that international politics suffer from a democratic deficit (see e.g., Nye 2001; Steffek and Nanz 2007), the interests of the public may then be aggregated and expressed through civil society actors which, in turn, safeguards public freedom (Clark et al. 1998: 2; Fox and Brown 1998; see Gulbrandsen and Andresen 2004: 59f; Oberthür et al. 2002: 134). As a result, organized civil society has the potential to function as a ‘transmission belt’ between domestic citizenry and the institutions of global governance (Steffek and Nanz 2007: 3). However, both of these alternative explanations are unrelated to civil society’s potential provision of information, but rather with a symbolic recognition of non–state actors, undertaken mostly out of principle or in order to increase the (perceived) level of legitimacy and commitment. Arguably, the shortcoming of my approach lies in the fact that I cannot confirm the applicability of these alternative approaches with certainty, although I can reject the validity of the information provision rationale in my context.

With regard to bureaucratic quality, a potential explanation might be that states with a low–quality bureaucracy even lack the capacity to identify, address, and attract non–governmental actors for their delegations. Countries with weak and low–quality bureaucracies often have very few resources and/or are unwilling to spend much of what resources they do have on civil society actors. Since adding civil society actors to a delegation typically means at least paying for their expenses, the information provision rationale cannot explain why such a country would want or be able to pay for civil society participants any more than additional governmental delegates. Ultimately, these kinds of states have a lower propensity to include civil society in their delegations.

Finally, and in terms of the salience of a negotiation issue, my results mirror previous comparative research (e.g., Stasavage 2004) arguing that states might be reluctant to engage with civil society when the stakes are particularly high in an issue area, since there are sovereignty

costs involved in sharing sensitive and strategic information with non-state actors, and more participation may decrease rather than enhance the likelihood of successful bargaining outcomes. All these alternatives seem indeed plausible explanations for the findings presented here. However, and as indicated, the research design does not allow for a direct observation of these mechanisms behind the postulated relationships. Therefore, future research might want to study more thoroughly whether these rationales actually apply either in the context of states' delegations at the UNFCCC or other international institutions.

Against this background, the main contribution of this chapter has been to theoretically unfold the information provision mechanism and empirically test its validity in the case of civil society participation in states' UNFCCC negotiation delegations. That being said, many important questions remain, four of which are briefly outlined here. First, as stated, further research could address the proposed alternative explanations. Especially research areas such as theories on collective action and its related problems might prove to be useful here.

Second, this chapter also introduced new data on countries' delegation compositions in the UNFCCC regime. Future research might seek to move ahead through compiling new data on other regimes as the UNFCCC addresses a relatively specific field of international law. Previous work has shown that participatory arrangements are scarce in the fields of finance and security issues, for example, but these are different from environmental politics or the UNFCCC in particular. This also would give rise to the expectation that openness depends not only on issue salience but also on the costs of losing secrecy that is supposedly higher in negotiations on trade, finance, or security matters.

Third, the data employed in this chapter also examined *which kind* of civil society actors participate in state delegations. However, it remains unclear *why* it is so, since my approach could only reject the validity of the information provision rationale in my context for either ENGOs or business representatives. The data presented in this work may be useful for addressing these and other related questions.

Finally, I examined the validity of the information provision argument in the context of states' UNFCCC delegations from the demand side, i.e., a state perspective. The underlying assumptions behind this treatment are that civil society actors are constantly able to provide information and expertise as well as are also willing to participate in delegations (i.e., seek high-level access to official actors). While this seems plausible and is likely to hold true on average (see, e.g., Albin 1999; Betsill and Corell 2001; Haall and Deardorff 2006; Bernhagen 2008; Gulbrandsen 2008; Vabulas 2011), exceptions might exist. For example, not all civil society groups have an equal amount of resources for conducting scientific research and providing information to states; also, some civil society organizations, e.g., Greenpeace, are reluctant to give up their independent status by being part of state delegations (see Keck and Sikkink 1998: 31; Sell and Prakash 2004: 148, 169; Vabulas 2011: 10) and it seems unlikely that non-governmental groups with starkly different preferences want to be represented on state delegations (see Crawford and Sobel 1982; Lohmann 1995). In other words, while this research's focus on the demand side was able to increase our understanding of states' willingness to include civil society in their delegations at the UNFCCC, it may be worth examining the supply side, i.e., civil society characteristics and incentives as well and more thoroughly than it was possible in this study. Accordingly, Risse-Kappen (1995) highlights the importance of internal characteristics such as resources, strategies, and leadership skills in relation to structural factors, e.g., domestic structures and transnational institutions, in influencing the policy impact of civil society groups (see also Albin 1999: 382f; Sell and Prakash 2004: 169; Stroup and Murdie 2013). Due to the current lack of data covering a broad set of actors and years on this, however, more data collection efforts seem necessary to address this issue more effectively (see, e.g., Bernhagen 2012: 16).

## 4 Civil Society Inclusion in Global Governance: Insights from Climate Politics

### 4.1 Introduction<sup>37</sup>

Much of the existing qualitative research on civil society in global governance concentrates on whether civil society actors matter, i.e., whether and how they are able to influence international policy-making and its outcomes. Various studies have, for instance, examined civil society groups' activities, such as lobbying, and their resources, e.g., their expertise and financial assets, to assess their influence on particular cases of policy-making (e.g. Princen 1994; Paterson 1996; Corell and Betsill 2001; Gulbrandsen and Andresen 2004; Betsill 2002; 2006; Betsill and Corell 2001; 2008). One aspect of this issue, which seems quite essential from a Political Science and International Relations perspective, has received rather little attention to date: namely – and as I tried to outline in the previous chapter as well – why governments involve CSOs in international policy-making. This question is fundamental because most scholars agree that, by and large, states are still in control of international policy-making processes. Why, to what extent, and in what form could they be interested in relinquishing some control over policy-making beyond the nation state? The literature on international environmental policy offers some interesting answers, on which we can build in this chapter.

Academic interest in why governments involve CSOs is motivated primarily by puzzling empirical observations in very prominent global policy areas, such as climate change. While formal participation of CSOs in international politics exists in a few areas, most notably the

---

<sup>37</sup> The following chapter is based upon an article that I co-authored with Thomas Bernauer and Vally Koubi. Therefore, I use the first-person plural throughout this chapter. At the time of submitting the habilitation, this chapter has been under review at an international peer-reviewed journal.

International Labor Office with its tripartite, corporatist representation of government, business, and labor, the overwhelming majority of global governance efforts are strictly intergovernmental (Thomann 2007). Examples include international trade liberalization, monetary policy, international banking regulation, and security policy. In global climate policy, in stark contrast, the policy-making process is characterized by the presence of enormous numbers of CSOs as observers, and impressive numbers of CSO representatives that are formally included in national delegations. At the most recent rounds of negotiations, about the same number of CSO representatives and government representatives have participated. More than 70% of the 193 countries involved in global climate politics included at least one CSO representative in their national delegation, and about 18% of all members of national delegations have been CSO representatives.

The formal inclusion of CSO representatives in national delegations offers greater opportunities for CSOs to influence governmental policy-makers, though it does not, of course, necessarily guarantee more influence, relative to other vectors of influence (Weiss and Gordenker 1996; Raustiala 1997; Thomann 2007; Gulbrandsen and Andresen 2004: 59; Oberthür et al. 2002: 134; Steffek and Nanz 2007: 11).<sup>38</sup> While it seems apparent why CSOs would welcome their inclusion in national delegations, it is more difficult to understand why governments may want to include CSOs. The existing literature notes, at the conceptual level, that governments face a dilemma in this respect. On one hand, the benefits to governments of including CSOs pertain to gains in information and legitimacy (see Grant and Keohane 2005; Biermann and Gupta 2011; Bernauer and Betzold 2012). On the other hand, including CSOs constrains government autonomy in the sense of affecting the traditional prerogative of the national government to negotiate international agreements with other governments and then bring home those bargains for domestic approval (Clark et al 1998; Clark 1995; Stasavage 2004). It may also reduce

---

<sup>38</sup> We do not imply that participating in state delegations is the exclusive avenue for exerting influence. We do also not state that access to delegations always and necessarily induces access to higher levels of decision making. We claim, however, that it is one potential (and perhaps a sufficient) avenue for doing so. In consistence with that claim, Biermann and Gupta (2011: 1857ff) also emphasize that the inclusion of civil society actors in international negotiations constitutes an important facet of the degree of legitimacy of those negotiations.



governments' possibilities for making concessions because the inclusion of CSOs makes it more difficult or even impossible to control information flows toward the outside. In other words, international negotiations are primarily an inter-governmental affair and states keep the prerogative to determine which non-governmental actors may participate. Consequently, civil society actors are often denied access to policy-making processes or are only allowed to participate as observers, i.e., they are not permitted to express their positions and participate in decision-making during the negotiating process *per se* (Weiss and Gordenker 1996; Raustiala 1997; Thomann 2007).

In light of this tradeoff, it is rather puzzling why governments formally include CSOs (Biermann and Gupta 2011: 1856). To illustrate this, consider some findings from new data we have collected on CSOs in global climate policy.<sup>39</sup> These results indicate that different countries seem to arrive at very different conclusions with respect to this dilemma. Counterintuitively, however, the correlation between CSO inclusion and liberal democracy is rather small. Some established democracies, such as the US or Germany, do not include CSOs in their national delegations, whereas other democracies, such as Brazil, India, or Switzerland do. Among the major Anglo-Saxon countries, the US and the UK do not grant CSO representatives access to their delegations, whereas, Canada and New Zealand do. China's delegation includes CSO representatives, whereas Spain's delegation does not. Hence, standard explanations taken from the literature on good governance (see Holmberg, Rothstein, and Nasiritousi 2009), which tend to emphasize income levels and liberal democracy, may obviously be rather poor predictors of CSO inclusion. What then can help us account for the observed heterogeneity?

As indicated, the existing theoretical literature highlights two motivations of governments to involve CSOs (for an overview, see, e.g., Bernauer and Betzold 2012). First, governments may expect to obtain useful information and expertise that they lack regarding the issue at hand (Raustiala 1997; see also Princen 1994; Betsill and Corell 2001; 2008; Biermann and Pattberg 2008). Involving CSOs can be an effective and cost efficient strategy for complementing human

---

<sup>39</sup> We describe these data in detail below in the empirical part of this chapter.

capital available from within government and public administration. The second motivation focuses on procedural legitimacy. Governments may opt for civil society participation as a means to mitigate the ‘democracy deficit’ and enhance the input legitimacy of global governance (e.g., Bernstein 2005; Grant and Keohane 2005; Betsill and Corell 2008; Steffek and Ferretti 2009; Biermann and Gupta 2011; Dryzek 2012).

In this chapter, we combine the legitimacy argument with a social network perspective to explain variation in CSO inclusion in global climate governance. We argue that governments are, *a priori*, hesitant to formally include CSOs in international policy-making processes because such inclusion imposes additional constraints on government behavior (Clark et al 1998; Clark 1995; Stasavage 2004). However, governments are embedded in broader networks of interstate relations, and, hence, their behavior with respect to CSO inclusion is likely to be informed of and affected by what other governments do. The reason is that contacts and information flows among governments facilitate the diffusion of ideas and adoption of common practices (Ward 2006; Dorussen and Ward 2008; Leifeld and Schneider 2012). Governments that are more strongly embedded in global governance networks benefit from a higher flow of information therein, and they are then more likely to be influenced by the practices of other governments with respect to CSOs. Governments that are more central to the global governance network are, therefore, more likely to include CSOs if their counterparts do so as well in order to avoid a potential legitimacy or information advantage of these counterparts.

We test this hypothesis with data on CSO inclusion in national delegations to the global climate negotiations in 1995–2008. Large-*N* statistical analysis, both *ex-post* and using in-sample and out-of-sample predictions, offers strong support for the hypothesized ‘contagion’ effect. Additional evidence from a survey of 50 national delegations to the 2011 climate conference in Durban suggests that legitimacy considerations are the main causal mechanism underlying the statistically observed contagion effect. The academic and practical relevance of this finding extends far beyond the specific case of climate policy, in the sense that our research contributes to ‘identifying sources and mechanisms that can contribute to enhanced

accountability and legitimacy of governance arrangements' (Biermann and Gupta 2011: 1856; Kingsbury 2007; Mason 2008).

The following section develops the theoretical argument in greater detail. We then describe the empirical design and present the results. The final section summarizes the main findings and discusses their research and policy implications.

## **4.2 Social Networks, Legitimacy, and Civil Society Inclusion:**

### **Theoretical Argument**

We build our theoretical argument by first elaborating on social networks, and how they may, through increased interaction and information flows, affect the evolution of shared norms as well as practices by facilitating the transmission of information. Against this background, we then discuss the reasons why states may want to involve civil society in global governance efforts, with an emphasis on the legitimacy enhancing effects of such involvement. In a third step, we connect the social networks and civil society arguments to hypothesize that governments that are more central to the global governance network are more receptive to the potential of legitimacy enhancing effect of CSO involvement. Hence, they are more likely to include civil society actors in response to other governments adopting this practice.

#### *4.2.1 Social Networks: The Importance of Ties*

Most scholars regard individual state attributes, such as power, wealth, or institutions, as the main determinants of state behavior at both domestic and international levels. Social network theory complements this perspective by adding relational systems between states (e.g., Granovetter 1985; Wasserman and Faust 1997; Borgatti, Mehra, Brass, and Labianca 2009; Hafner–Burton,

Kahler, and Montgomery 2009; Maoz 2010; Bodin and Prell 2011; Ward, Stovel, and Sacks 2011). Social network theorists examine the patterns of relationships between members of a relevant network. They argue that the structure of a network and the positions of states therein determine their propensity to adopt (new) practices. In other words, social network analysis focuses on the interdependence of actors and how their positions in networks influence their opportunities, constraints, and behavior.

A social network is characterized by a set of actors and relations among them. Actors can be individuals, groups of people, or states that are connected by specific types of relationships. Each kind of resource exchange is considered a social network relation and actors experiencing the relation are said to maintain a tie. The strength of a tie may range from weak to strong, depending on the quantity, quality, and frequency of exchanges between actors. Patterns of who is tied to whom, and how, reveal the structure of the underlying network: they show how resources flow among actors and how they are interconnected in the network. Mutual memberships of states in intergovernmental organizations (IGOs), which will be of particular interest in this chapter, are one example of a tie.

Ties between countries can be direct or indirect. Direct ties are usually characterized by denser and shorter connections between countries. Indirect ties involve ties of both countries in a given pair of countries to specific other countries. That is, two countries with an indirect tie are connected via their relationships with other countries. Indirect ties thus tend to involve less dense and longer connections between countries. The concentration or cohesiveness of a social network is then measured in terms of the number and strength of ties between the actors in the network (Wasserman and Faust 1997: 314f).

Ties in social networks, both direct and indirect, facilitate the transmission of information about interests and intentions, and they tend to promote a common understanding thereof. Links that are shorter and denser enable actors to convey information at lower cost, with more precision, and faster. Denser social networks can thus help reduce uncertainty, increase trust, and facilitate the development of mutually accepted norms (Ward 2006; Hafner–Burton and

Montgomery 2006; Dorussen and Ward 2008: 194f; Hafner–Burton et al. 2009: 569; Leifeld and Schneider 2012; Ward and Cao 2012). Interaction through network ties, ‘which comes into existence when individuals attempt to make best use of their individual resources’ (Coleman 1990: 300), influences the behavior of actors by ‘endowing some with greater social power and by shaping common beliefs about behavior’ (Hafner–Burton and Montgomery 2006: 8).

Denser social networks also tend to be associated with more social capital – the latter defined, according to Putnam (2000: 19), as ‘connections among individuals – social networks and the norms of reciprocity, and trustworthiness that arise from them’ (see also Coleman 1990: 310). Social capital involves mutual obligations, relations of trust, shared norms, common expectations, authority relations, and organizations that facilitate collective action in various ways (Coleman 1990: 300ff; Dorussen and Ward 2008; Pretty and Ward 2001: 209f; Ward 2006: 151ff; Leifeld and Schneider 2012: 3). First, social capital creates obligations and expectations that help enforce cooperation. Multiple ties, especially when strongly established, allow for sanctions such as the withdrawal from a voluntary regime, and positive incentives, e.g., issue linkages, to be used more effectively. Second, since non-cooperating actors can be excluded from other forms of reciprocity, interaction may increase the likelihood that actors pursue shared goals through complementary means. Third, the connection of issues and interests furthers predictability of the behavior of other countries and, therefore, establishes trust, which lowers the fear and uncertainty that other states will defect from a cooperative agreement. Finally, social capital enables communication among states, which makes coordination easier and decreases uncertainty.

Ward (2006: 151f), Wasserman and Faust (1997: 173), and other authors (e.g., Bodin and Prell 2011; for an overview, see Hafner–Burton et al. 2009) have emphasized that countries with various ties to outside parties are extensively involved in relationships with the latter. This involvement makes states more embedded or central in any network. Greater network centrality increases opportunities for knowledge sharing, and frequent encounters provide opportunities for face-to-face contact that facilitate the diffusion of ideas, norms, and practices. In international politics, on which this chapter focuses, IGO networks can thus form the basis for normative

influence between states (Torfason and Ingram 2010). Empirically, for example, von Stein (2008) finds that states' level of centrality in the global IGO network has a positive effect on their participation in international climate agreements. Bernauer et al. (2010) find that countries are more likely to join global environmental agreement if they are more strongly embedded in IGO networks. The recent literature also shows that mutual IGO membership affects domestic policy choices, since connections in the network of international organizations can provide countries with information that fosters policy-learning and socialization among states (Spilker 2012; Cao 2009; 2010; Hafner-Burton, von Stein, and Gartzke 2008)

#### *4.2.2 Legitimacy Promoting Effects of Civil Society Involvement*

As noted above, it is far from obvious that states should be willing to involve civil society organizations in global governance. The main reason is that involving CSOs imposes constraints on government behavior (Clark et al 1998; Clark 1995; Stasavage 2004). Such constraints are particularly pronounced if CSOs are included in national delegations in international policy-making. Giving CSOs a 'seat at the table' may in fact result in important principal-agent problems. Even if governments carefully select CSO representatives in ways that minimize these problems, the costs of involving CSOs can be considerable. CSO representatives may use the improved opportunity for direct access to government representatives to influence the latter's bargaining position in ways that are undesirable from the government's viewpoint. They may openly voice dissent vis-à-vis their government's position at the bargaining table or vis-à-vis the press/public and, hence, weaken their government's negotiating position. And they may leak confidential information to the public (the press).

Critics have challenged CSO demands for stronger representation in global governance efforts on other grounds as well. For example, with reference to the literature on lobbying groups at the domestic level, critics point to the potential of capture of public policy by parochial private

interests (e.g., Baumgartner and Leech 2001; Baumgartner et al. 2009). Others emphasize principles of representative democracy and the fact that CSO representatives are not legitimated through democratic elections (Moravcsik 1997; Rootes 1999; see also Grant and Keohane 2005). Yet others criticize that many CSOs do not, within their respective organization, meet good governance and liberal democracy standards that are usually applied to evaluate governments and political systems of entire countries (Edwards 1998; Rieff 1999). Moreover, in most global policy-making arenas where CSOs are very active, CSOs from Western countries are overrepresented (Beckfield 2003).

The existing literature on CSOs and global governance, which is largely conceptual in nature and uses qualitative case studies for purposes of illustration or plausibility checks, highlights two potential reasons why states might be interested in involving CSOs in their global governance efforts. First, governments may expect to obtain useful information and expertise. Involving CSOs can be an effective and cost efficient strategy for complementing human capital available from within government and public administration (Raustiala 1997; see also Princen 1994; Betsill and Corell 2001; 2008; Biermann and Pattberg 2008). Raustiala (1997), for example, notes that, given high levels of uncertainty and complexity that characterize environmental issues, civil society actors can help governments obtain policy-relevant information at low cost.

According to this logic, we should see particularly strong government demand for CSO involvement on the part of countries with lower levels of government capacity (Princen 1994: 34ff; Raustiala 1997: 726f). However, recent research does not support this empirical implication of the knowledge argument. Böhmelt (2013) observes that civil society actors are more often included in delegations of countries with higher bureaucratic quality. These countries '[...] are least in need of expertise and information provision' (Böhmelt 2013). Others have challenged the knowledge argument on conceptual grounds. For instance, Bernauer and Betzold (2012: 64) argue that the 'existing research offers episodic, but not systematic and strong empirical evidence that more civil society participation has contributed to more effective agreements. Although it is plausible to argue that civil society can help reduce information deficits and, thus, facilitate

agreement, the problem could also be too much information rather than too little. In other words, slow progress in solving many of the pressing environmental problems may not stem from a lack of information and know-how, or from insufficient involvement of civil society, but rather from (well-informed) government preferences that stand in the way of effective collective action.'

The second motivation focuses on (procedural) legitimacy. Governments may opt for civil society participation as a means to mitigate the 'democracy deficit in global governance and enhance input legitimacy of global governance (e.g., Grant and Keohane 2005; Bernstein 2005; Betsill and Corell 2008; Steffek and Ferretti 2009; Biermann and Gupta 2011; Bernauer and Betzold 2012; Dryzek 2012).<sup>40</sup> In the words of Lipset (1983: 64), 'legitimacy involves the capacity of a political system to engender and maintain the belief that existing political institutions are the most appropriate and proper ones for the society.' There is a widespread perception among electorates in many countries that global governance suffers from a democratic deficit (e.g., Nye 2001; Bernstein 2005; Steffek and Nanz 2007; Steffek and Ferretti 2009). Many observers of global governance have thus called for 'opening up the intergovernmental system to institutionalized balanced involvement of non-state actors' (Biermann and Gupta 2011: 1862). Adding CSO representatives to national delegations should, according to this logic, enhance political responsiveness, transparency, and democratic accountability, and thus ultimately popular legitimacy in the sense of public support (Clark et al. 1998: 2; see Gulbrandsen and Andresen 2004: 59f; Grant and Keohane 2005; Oberthür et al. 2002: 134; Biermann and Gupta 2011: 1858; Bernauer and Betzold 2012; Gemmil and Bamidele-Izu 2002; Steffek and Ferretti 2009; Dombrowski 2010; Steffek and Nanz 2007: 3). Survey results from various countries show that people trust CSO representatives at least as much or even more than their governments with respect to international negotiations. For instance, a 2004 survey conducted by the International

---

<sup>40</sup> Legitimacy commonly describes 'the state or quality of being legitimate, that is, of being in accord with established legal norms and requirements, or conforming to recognized principles or accepted rules and standards of behavior. Core elements of the concept of legitimacy are the acceptance and justification of authority. Acceptance relates to the way in which rules or institutions are accepted by a community as being authoritative. Justification relates to the reasons that justify the authority of certain rules or institutions' (Biermann and Gupta 2011: 1858; see also Bernstein 2005). In this chapter we concentrate on external legitimacy, i.e., the acceptance of a rule by non-members or non-participants (Biermann and Gupta 2011: 1858).



Social Survey Program (Haller, Jowell, and Smith 2009) finds that, on average, 42% of the respondents (strongly) disagree with the statement that ‘most of the time we can trust people in government to do what is right.’ At the same time, 39% of the respondents believe that ‘in international organizations, citizens’ organizations should be involved directly in the decision-making process.’ Recent research by Bernauer and Gampfer (2012) based on survey experiments offers support for the assumption that electorates favor CSO inclusion. However, we do not know of any empirical research at the macro level that systematically accounts for variation across countries in the general pattern of government–CSO interaction in global governance.

#### *4.2.3 Network Centrality and Civil Society Inclusion*

The final step in the theoretical argument is straightforward. Given that the existing evidence tends to support the legitimacy argument more than the knowledge argument, we focus on the former and combine it with the social network perspective. Governments, when deciding whether or not to include CSOs, are likely to trade off two countervailing aspects of CSO involvement; concerns that CSO involvement will impose additional constraints on government in policy-making; and the potential legitimacy increasing effect of CSO involvement.<sup>41</sup>

In view of considerable uncertainty about the costs and benefits of including CSOs, we expect that governments may want to pay close attention to what other governments do. This is where social networks come in. Consensual and trusted knowledge, reduced uncertainty, social capital, and, ultimately, the degree of centrality in a network can shape actors’ behavior toward CSOs. States do have concerns over legitimacy and accountability (Bierman and Gupta 2011; Bernauer and Betzold 2012), but only value these concerns higher than those about government autonomy if other countries display the same behavior *and* if they are aware of this. Hence, the likelihood of including CSO representatives in any given national delegation depends on the degree of the

---

<sup>41</sup> Note that governments may try and avoid this dilemma by including CSOs that are very close to the government. But doing so is unlikely to have the desired legitimacy increasing effect and, hence, the dilemma remains.

respective country's network centrality and the behavior of other governments vis-à-vis CSOs. When governments are well connected to other states, i.e., they experience a higher flow of communication in the overall state network, they are more aware of other countries' preferences toward civil society. Second, they will then be more likely to include CSO representatives if their counterparts do so as well in order to avoid potential legitimacy advantages of those counterparts. This means that countries then discount the loss of autonomy and put a higher value on legitimacy gains – if other states do the same.

Consider decisions of countries  $i$  and  $j$  in this respect. If  $j$  decides to involve CSOs,  $i$  has a stronger incentive to do the same for two closely related, but distinct reasons. First,  $i$  learns that  $j$  has come to the conclusion that the advantages of including CSO outweigh the costs. This reduces uncertainty for  $i$  in respect to the costs and benefits of CSO inclusion and motivates inclusion of CSOs on the part of  $i$ . Second, CSO inclusion by  $j$  but not by  $i$  could become disadvantageous for  $i$  both domestically and internationally. Domestically, CSOs in country  $i$  are likely to use CSO inclusion by  $j$  to urge the former to involve CSOs as well. Internationally,  $i$  may also have to justify vis-à-vis  $j$  why it is not involving CSOs. Greater network centrality is important in this respect, since it leads to more information on government preferences and behavior traveling both ways: to the respective government, and from the latter to other governments.

Network centrality is likely to amplify the two effects mentioned. Hence our main hypothesis in need of empirical tests: *the net effect of these processes is that states, which are more central to the global governance network, are more likely to include CSOs in response to other countries doing so. Conversely, states that are peripheral to the global governance network are unlikely to include CSOs, even if other states in the network do so.*

### 4.3 Research Design

The main empirical implication of our theoretical argument is that network centrality is conducive to CSO involvement, contingent on other countries' behavior in this respect. We first use a large- $N$  statistical approach to examine whether the empirical evidence is consistent with the theoretical argument. This approach cannot, however, directly tell us whether legitimacy considerations and the constraints – legitimacy trade-off are in fact the underlying driving force in government decisions on CSO involvement. To enhance confidence in our quantitative findings, we thus add insights from survey research conducted at the 17<sup>th</sup> CoP of the UNFCCC in Durban in late 2011.

The dependent variable measures whether a country included at least one CSO representative in its national delegation to a given CoP to the UNFCCC (1), or not (0). These panel data cover the time period from 1995 to 2011. Consistent with the UNFCCC definition applied to participants in climate CoPs, our definition of CSO representatives includes persons who are not employed or affiliated with a government or an IGO (Arts 2005). Such persons may represent environmental NGOs, business associations, or research institutions (Steffek and Nanz 2007).

We then merged this data on CSO inclusion to a dataset whose unit of analysis is the directed country dyad-year. This data structure is necessary given the inherent directed logic of our theory. That is, for example, the dataset includes both the country pair France–Brazil in 1998 and the country pair Brazil–France in 1998. The reason is that, according to our theoretical argument, Brazil's inclusion of CSOs could affect the probability of France also including CSOs, and vice-versa. Because most of our covariates are available only up to 2005, the combined data set covers the time period 1995–2005.

The statistical analysis uses probit regression models, since the dependent variable is dichotomous. Robust standard errors are clustered on each dyad to account for intra-group correlations or other forms of cross-section heterogeneity. The temporal dependencies are

controlled by including a civil–society–years variable and different sets of cubic splines (Beck, Katz, and Tucker 1998). This approach acknowledges that CSO inclusion might depend on corresponding choices in previous years.

The main explanatory variables are CSO inclusion by other countries, and network centrality. The information on CSO inclusion by other countries is taken from with the same data source as used for the dependent variable. To avoid potential problems with endogeneity, this variable is lagged by one year. This approach essentially follows the logic of spatial lag models, though we do not weigh our explanatory variable by proximity or other factors (e.g., Franzese and Hays 2008; Cao 2010: 833; Cao and Prakash 2012: 75; Ward and Cao 2012: 10). In measuring network centrality, we consider a country's whole range and any strength of all ties to the entire network if intergovernmental organizations (IGOs) (Hafner–Burton et al. 2009: 563f; Dorussen and Ward 2008; Ford and Fulkerson 1956; Freeman, Borgatti, and White 1991). Our network centrality variable measures centrality in terms of the reduction in total information flow in the network that would occur if the respective node (actor) did not exist. i.e., the degree to which the maximum flow between all unordered pairs of points depends on  $i$ , and it is calculated by,

$$\text{Network Centrality} = \sum_{j < k}^n \sum_{j < k}^n m_{jk}(x_i)$$

where  $i \neq k \neq j$ , and  $x_i$  is a node in the network, i.e., the country of interest in a directed dyad.  $m_{jk}$  is the maximum flow of information or the strength of ties from country  $x_j$  to another country  $x_k$ . Consequently,  $m_{jk}(x_i)$  is the maximum flow of information from  $x_j$  to  $x_k$  that passes through country  $x_i$ . It is calculated taking into account all actors of the network, i.e., all unordered pairs of states in the global governance network (see Freeman, Borgatti, and White 1991: 148).

We use a standardized measure that ranges between 0 and 1 and follow Dorussen and Ward (2008; see also Ward 2006) in operationalizing informational ties between states via common IGO memberships. The raw data for our network centrality variable was retrieved from Pevehouse, Nordstrom, and Warnke (2004). We then calculated the corresponding adjacency matrixes for each year in 1995–2005 and estimated the respective values on the network centrality variable for each country and year in every directed dyad. This operationalization also

has practical reasons, as most IGOs are weakly institutionalized (Dorussen and Ward 2008). Thus, in practice, we can ignore their (direct) influence as an intervening variable and, in our view, IGOs primarily serve as a vehicle that establish ties between states through, e.g., the encounter of representatives in meetings and the working practices of the respective organization. To estimate the interactive impact of *Civil Society – Dyadic Counterpart* and *Network Centrality*, we multiply the two variables and simultaneously include the new variable in the models.

The empirical models also include a range of covariates that help avoid omitted variable bias. Furthermore, considering alternative determinants of civil society inclusion also addresses possible selection effects, as only certain types of delegations are likely to consider the inclusion of civil society actors. We control for the knowledge provision argument as discussed in the theory section by including an indicator for the quality of a country's public administration. We use data from the Political Risk Services Group's (PRSG) International Country Risk Guide (Howell 2011) to that end. Specifically, we include an indicator that is based on expert assessments and uses a 0–4 scale. Higher values stand for more effective public administration. According to the knowledge argument, more effective public administrations should be less in need for CSO expertise.

We also include GDP *per capita* (*ln*). This variable captures a variety of effects that are likely to motivate governments to include CSOs. Richer countries tend to have more capable public administrations, though the correlation between the two variables in our dataset is modest. Richer countries may thus be less likely to include CSOs if the knowledge provision argument is empirically relevant. However, richer countries also tend to be more democratic, which in turn may be conducive to CSO inclusion. With a view to the environmental Kuznets curve literature (Seleden and Song 1994; Grossman and Krueger 1995), richer societies are also likely to be more interested in forms of environmental protection focusing on measures other than the traditional ones that reduce local pollution. Climate policy may thus be more salient in richer than in poorer countries (Mendelsohn, Dinar, and Williams 2006). This, in turn, can motivate governments of richer countries to include CSOs. However, more developed countries also tend to be less

vulnerable to climatic changes, which may reduce the political saliency of the climate issue and thus the pressure for including CSOs. Because our theoretical focus lies elsewhere, we are agnostic about the net impact of such income effects, but control for them. The data used are from the World Bank Development Indicators.

As noted above, democracies, relative to non-democracies, are more likely to provide environmental public goods at the national level and are more inclined to cooperate in international environmental problem solving efforts as well (e.g., Congleton 1992; Ward 2008; Bernauer et al. 2010). The reasoning is that democratic governments need to provide more benefits, including environmental public goods, to a relatively large (compared to non-democracies) part of the electorate in order to survive politically. We use Polity IV data to measure democracy (Marshall and Jaggers 2004). The values of this variable range between -10 (full autocracy) and +10 (full democracy). Data for micro-states, which are missing in the Polity IV data, are imputed with data from Gleditsch (2008).

CSOs are, by and large, likely to have more political clout domestically if they are more numerous. We control for this effect by adding the number of national environmental NGOs registered in each country using data from the International Union for Conservation of Nature (Bernauer et al. 2013). The literature leads us to expect that pollution levels will fall with the power of green civil society groups (see Bernauer et al. 2013; see also Cao and Prakash 2012: 70; Ward and Cao 2012: 6).

The size of a country's national delegation may affect the probability of that delegation including CSOs. For example, the average delegation size of the US in our dataset is about 71, while the Bahamas sent only two delegates to the CoPs on average. We use population size of a country ( $\ln$ ) to control for this potential effect. The data is taken from the World Bank Development Indicators. Similarly, 'big and important' countries might be more reluctant to accept constraints on their behavior that could result from CSO involvement. To account for this possibility, we include a dichotomous major power variable taken from the Correlates of War Project (Singer 1988).

Table 4.1 shows descriptive statistics for all explanatory and control variables in the analysis. The variation inflation factors (VIFs) indicate that simultaneous inclusion of these variables is unproblematic from the viewpoint of potential multicollinearity. Perhaps contrary to what one might suspect, there is not much overlap between, for example, democratic regimes and bureaucratic quality of countries.

**Table 4.1** Descriptive Statistics

	Obs	Mean	SD	Min	Max	VIF
Civil Society Inclusion	354,547	0.26	0.44	0	1	
Civil Society – Dyadic Counterpart	354,547	0.26	0.44	0	1	1.00
Network Centrality	429,088	0.53	0.11	0.03	0.72	1.39
Bureaucratic Quality	329,882	2.19	1.15	0	4	3.25
Income – GDP per capita (ln)	449,567	7.75	1.64	4.16	11.79	3.50
Democracy	416,779	3.17	6.70	–10	10	1.40
Major Power	466,144	0.04	0.19	0	1	1.59
Population (ln)	461,978	15.43	2.14	9.15	20.99	1.93
Domestic Civil Society Leverage	347,500	4.74	7.02	0	54	1.86

Interaction term omitted from table

## 4.4 Empirical Results

### 4.4.1 Principle Findings

We use multivariate probit analysis to estimate three models. The first model concentrates on the main explanatory variables, while it excludes the control items except those for temporal aspects. The second model includes only the control covariates. The third model considers both explanatory and control variables. Instead of reporting the probit coefficients in standard form, we present simulated first difference estimates (King, Tomz, and Wittenberg 2000). The first difference, in this context, equals the change in probability of a country including CSO representatives that results from a change on the respective explanatory (or control) variable from the minimum to the maximum value, while holding all other covariates at their median or mean

value, respectively.

**Table 4.2** Main Results

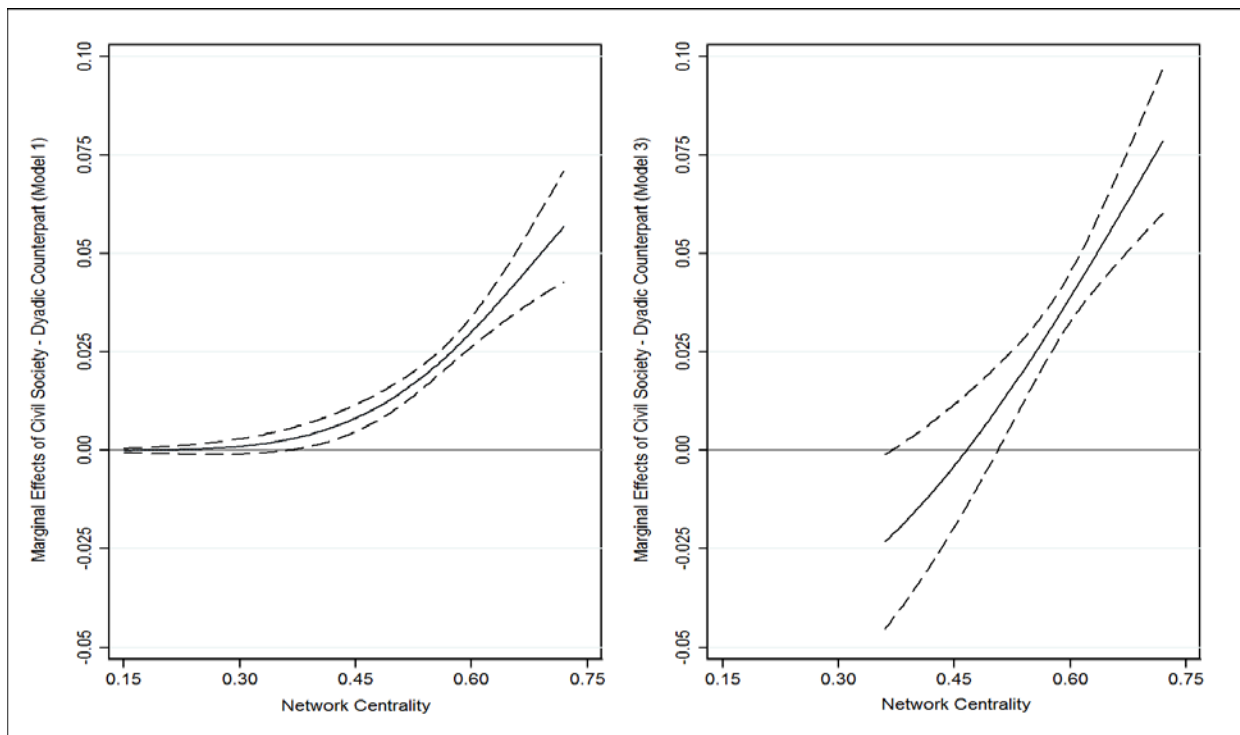
	Model 4.1	Model 4.2	Model 4.3
Civil Society – Dyadic Counterpart	–0.009 [–0.033; 0.015]		–0.120 [–0.169; –0.069]
Network Centrality	0.302 [0.295; 0.309]		0.225 [0.206; 0.245]
CS–Dyadic Counterpart * Netw. Centr.	0.049 [0.013; 0.092]		0.218 [0.137; 0.300]
Bureaucratic Quality		–0.012 [–0.028; 0.004]	0.019 [0.000; 0.037]
Income – GDP per capita (ln)		0.387 [0.372; 0.403]	0.328 [0.309; 0.348]
Democracy		0.202 [0.195; 0.209]	0.187 [0.179; 0.195]
Major Power		–0.075 [–0.084; –0.066]	–0.049 [–0.059; –0.038]
Population (ln)		0.666 [0.656; 0.676]	0.594 [0.581; 0.607]
Domestic Civil Society Leverage		–0.174 [–0.191; –0.157]	–0.175 [–0.191; –0.159]
Civil Society Years	–0.605 [–0.611; –0.599]	–0.608 [–0.613; –0.604]	–0.586 [–0.591; –0.581]
Spline 1	–0.882 [–0.885; –0.880]	0.061 [–0.103; 0.195]	–0.371 [–0.558; –0.146]
Spline 2	–0.939 [–0.941; –0.936]	–0.669 [–0.672; –0.665]	–0.675 [–0.680; –0.670]
Spline 3	0.170 [0.167; 0.173]	0.352 [0.348; 0.356]	0.344 [0.340; 0.349]
Obs	263,840	239,076	178,000
Log Pseudo Likelihood	–119,510.10	–121,313.94	–89,779.51
Area under ROC Curve	0.8040	0.8046	0.8062

First difference estimates ( $y=1$ ) when value of explanatory variable changes from min to max while holding all other variables at their median value. 90% confidence interval in brackets. Estimates are based on simulations ( $N=1,000$  of random draws for simulated parameters). Robust standard errors clustered on dyad not shown here

Table 4.2 shows the main findings. We start with the control variables in Models 4.2–4.3. Except for *Bureaucratic Quality*, all control variables have a substantial and statistically significant influence on the dependent variable. Countries with a higher income, more democratic states, and countries with a larger population are more likely to include CSOs in their national delegations. When moving from the minimum to the maximum on the *Democracy* variable, for instance, the probability of a country including CSOs increases by 19.5%. The *Major Power* and



*Domestic Civil Society* variables negatively affect the probability of CSO inclusion. While the former finding is intuitive, the latter is surprising. On average, the probability of CSO inclusion decreases by 17.5% as *Domestic Civil Society* grows from its minimum to its maximum value. One possible interpretation of this result relates to the democracy–civil society paradox examined by Bernauer et al. (2013). They argue that the marginal positive effect of civil society on international environmental cooperation decreases at high levels of democracy (see also Johnson and Prakash 2007). The insignificant effect of bureaucratic quality lines up well with previous findings that are unable to find robust evidence for the knowledge provision argument.



**Fig 4.1** Interaction effect of *Network Centrality* and *Civil Society – Dyadic Counterpart*

*Note:* Left panel based on Model 4.1. Right panel based on Model 4.2. Dashed lines indicate 90% confidence interval

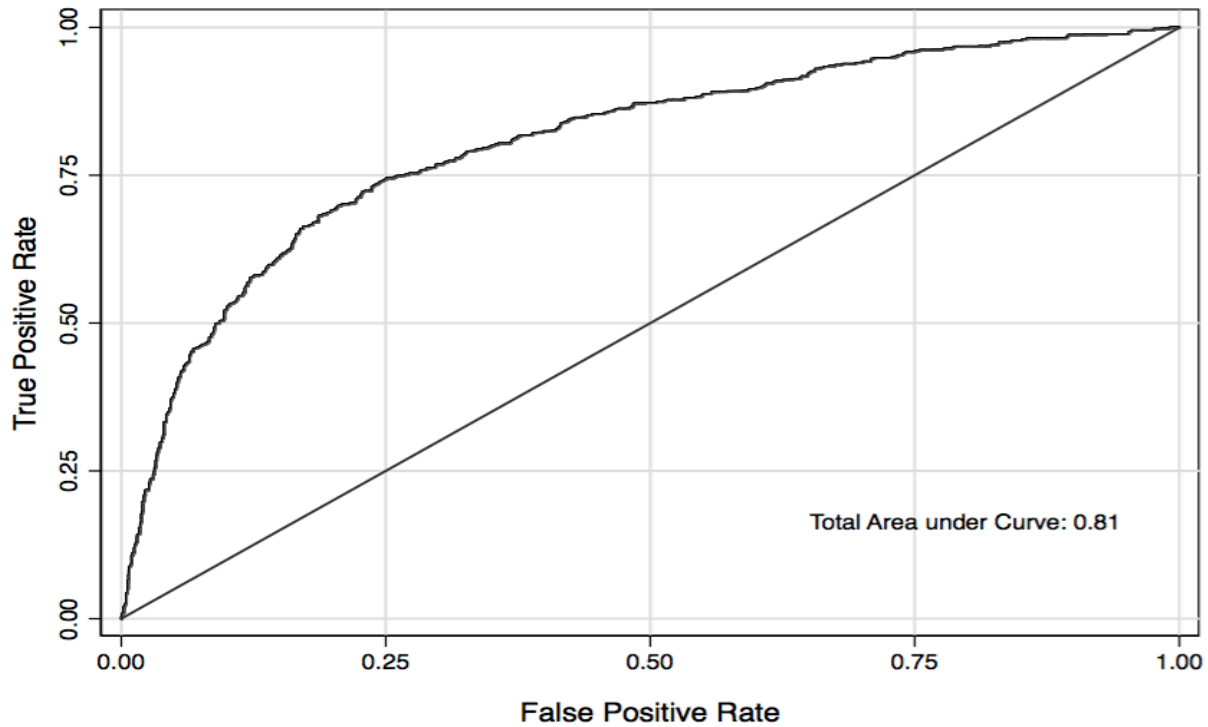
As regards the two explanatory variables and their interactive effect, we cannot interpret this effect directly (see Brambor, Clark, and Golder 2006). Thus, we computed the marginal effects of CSO inclusion by the other country in a given dyad (*Civil Society – Dyadic Counterpart*) along the values of *Network Centrality* to allow for a substantive interpretation. Figure 4.1 depicts the results.

The likelihood of CSO inclusion increases by about 5% – 7% if a state is very central in the global governance network and if the other country in a given dyad with that country has included CSO representatives in its national delegation before. This finding supports our theoretical argument that countries include CSOs to enhance procedural (input) legitimacy. Conversely, the evidence also shows that countries that are peripheral to the global governance network are unlikely to include CSO representatives even if other countries in the network do. This finding is supported by the insignificant marginal effects of *Civil Society – Dyadic Counterpart* at low to moderate values of *Network Centrality*. In the same vein, countries that are central to the network do not include CSOs if other countries do not include CSOs. Put differently, even if a country is well connected in the network and, thus, is able to gain information regarding its counterparts' intentions and preferences, these actors still have to include civil society actors in the first place. If they refrain from that, though, even a well-connected country will not consider civil society actors in its delegation, since then it will be less concerned about issues of legitimacy than issues of sovereignty, autonomy, and power-sharing. Ultimately, and under those circumstances, it is unlikely that a state will invite civil society groups to its negotiation delegation.

#### 4.4.2 *Extending the Scope: In-Sample and Out-of-Sample Predictions*

Although the evidence shown in Table 4.2 provides strong support for our theoretical argument, the methodology literature notes that drawing inferences from statistically significant results could be misleading because it tells us little about the predictive power of a given variable or model (see Ward, Greenhill, and Bakke 2010). This means that our models may merely provide a detailed description of the relationships that happen to exist in the original data. But they may not capture the true causal relationships and may thus offer rather poor predictions (Beck, King, and Zeng 2000). To address this point, we assess the ability of our main model (Model 4.3) and our

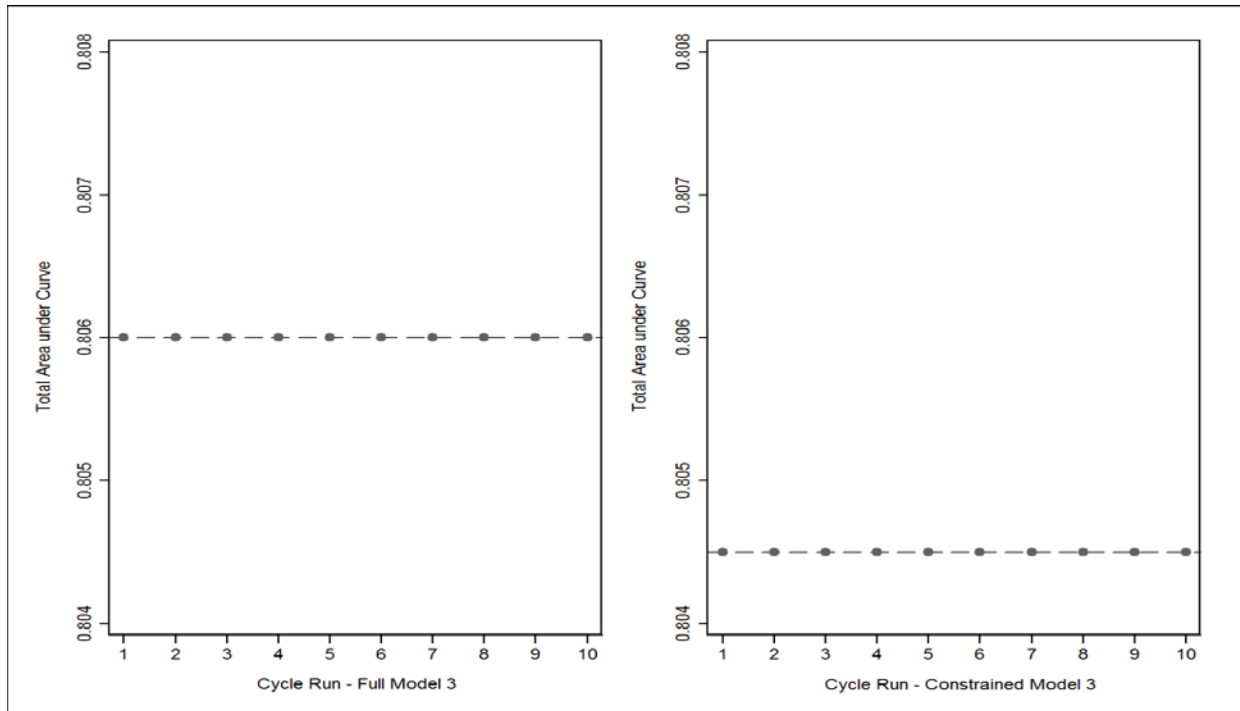
main explanatory variables to predict the inclusion of CSO representatives in national delegations by in-sample and out-of-sample prediction techniques (see Ward, Greenhill, and Bakke 2010: 367ff). Hence, we employ a causal model to differentiate statistical association from causal impact (see Cao 2009: 1118).



**Fig 4.2** In-Sample Prediction: Area under ROC Curve for Full Sample

The Receiver Operator Characteristic (ROC) plot in Figure 4.2 sheds light on the trade-off between correctly classified cases and false positives on one hand, and the actual in-sample predictive power of Model 4.3 on the other. Generally, models with more predictive power generate more ‘true positives at the expense of fewer false positives’ (Ward, Greenhill, and Bakke 2010: 366). A model with perfect predictive power would correctly classify all actual cases and never generate false positives. While our model does not perfectly predict the inclusion of CSO representatives in national delegations, it predicts a randomly chosen positive event better than a randomly chosen non-event. This is indicated by the area under the ROC curve statistic (AUC), which can vary between 0.5 (no predictive power) and 1.0 (perfect predictive power). As shown by Table 4.2 and Figure 4.2, all our models perform well above average in this regard. The

full model (Model 4.3: 0.81) has the strongest predictive power.



**Fig 4.3** Out-of-Sample Prediction: 4-Way Cross-Validation

*Note:* Left panel based on estimates of AUC for full sample. Right panel based on estimates of AUC for full model leaving out *Civil Society – Dyadic Counterpart*, *Network Centrality*, and the interaction term of the latter two variables. Four-way cross-validation estimates are shown by dots

Out-of-sample predictions are an even harder test of the predictive power of statistical models. We use a 4-fold cross-validation quasi-experimental setup that is repeated 10 times (Ward, Greenhill, and Bakke 2010: 370)<sup>42</sup> – either for the full model or a model that omits *Civil Society – Dyadic Counterpart*, *Network Centrality*, and the interaction term of the two. Figure 4.3 shows the results. The predictive power either of the full model or the reduced model that excludes the main explanatory items decreases, relative to the in-sample prediction discussed above. Nevertheless, the predictive power of the full model remains rather high (AUC=0.806; left panel) and the average AUC of the estimations without *Civil Society – Dyadic Counterpart*, *Network Centrality*, and the interaction term of the two (0.8045) is lower than the AUC of the out-of-sample prediction of the full model. This result upholds even in comparison to the

<sup>42</sup> The procedure is described in Ward, Greenhill, and Bakke (2010).

estimated but unreported values of the other explanatory variables. Ultimately, we conclude that the predictive power of our main variables remains unchanged – even when implementing the ‘tougher’ out-of-sample prediction.

#### 4.4.3 Robustness Checks

The results reported above are robust to a wide range of alternative model specifications. Clarke (2005) has shown that the inclusion of control variables may actually increase the likelihood of obtaining biased estimates, rather than decreasing it. Some control variables we use may thus (artificially) reduce the observable effect of our two main explanatory variables and their interaction term. Model 4.1 does not include any control variables and still confirms our main results, though.

Table 4.1 suggests that inclusion of CSO representatives in national delegations is quite rare: 26% of our 354,547 observations capture the onset of CSO participation in national delegations. We follow King and Zeng (2001) and correct the intercept estimate via a rare-events logistic regression model. The main findings are not affected by this change of statistical procedure.

We also considered Bonacich’s (1972) eigenvector item, which takes account of the centrality of adjacent nodes when calculating the centrality of a particular node. Still, our results remain virtually the same.

We also used three-stage least squares regressions (3SLS) to investigate whether our findings might suffer from simultaneity bias. For instance, our estimates of *Network Centrality* could be biased due to self-selection of countries into IGOs (see, e.g., Ringquist and Kostadinova 2005; Ward 2006). In our case, the endogenous variables are *Civil Society Inclusion* and *Network Centrality*. While the results are very similar to those shown in Table 4.2, *Network Centrality* still has a positive effect that is significant at the 1% level, but the effect of *Civil Society Inclusion* is not significant. This result supports the conclusion that the causal effect runs from network

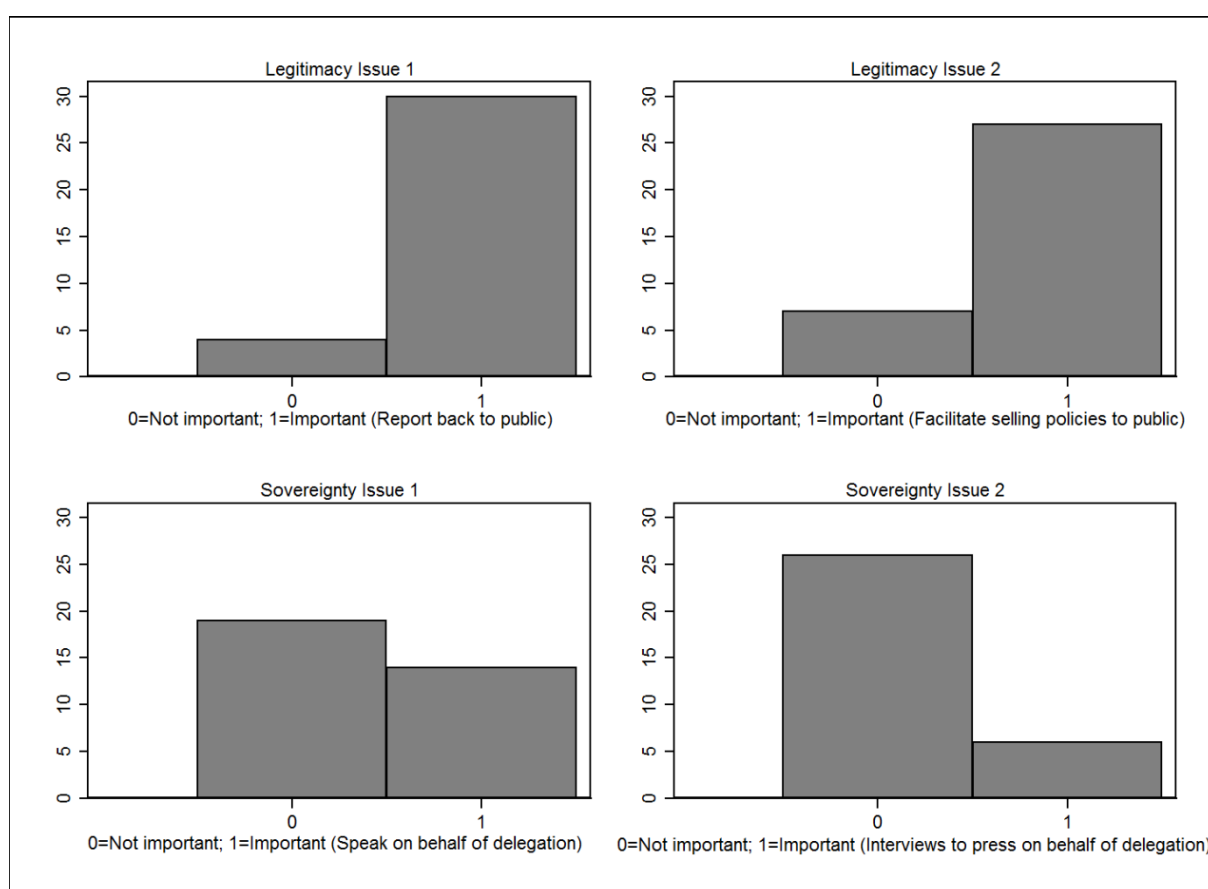
centrality to CSO inclusion, and not the other way.

#### *4.4.4 Survey Results*

The statistical results reported above show that states that are more central to the global governance network are more likely to include CSOs if other states do so as well. We argued that the underlying causal mechanism is that governments trade off additional constraints imposed by CSO inclusion against legitimacy and knowledge gains. The statistical analysis includes control variables that proxy for the knowledge logic. The empirical evidence resulting from this approach is, therefore, consistent with the argument that the positive interaction effect of network centrality and CSO inclusion by other states is driven by government expectations of legitimacy gains through CSO inclusion.

Results of a survey we conducted with government representatives from 50 national delegations to the climate CoP in Durban in December 2011 provide additional support for the hypothesized causal mechanism underlying the statistical model results. As in all surveys of this kind, the sample is not entirely random and the respondents occupy differing functions at different levels of hierarchy in national delegations. However, the survey covers a wide range of countries that differ in many ways that are relevant for our purposes; for instance, in terms of income levels (e.g., Tajikistan, Bulgaria, Denmark), political system (e.g., China, Pakistan, the USA), country size (e.g., Kiribati, Peru, China), geographic location (our sample includes several countries from each continent), and civil society inclusion in the national delegation (e.g., Brazil, Libya, Germany). Moreover, 34 (68%) of the countries surveyed included CSO representatives in their respective delegation, whereas 16 (32%) did not. These shares correspond almost exactly to the shares in our data set for the statistical analysis, which covers almost all countries in the UNFCCC process. Hence we are confident that the responses obtained reflect the dominant views on CSO inclusion among the population of countries in global climate politics.

The main reasons given by respondents from the 16 countries that do not include CSO representatives in their national delegation were: CSOs and governments have different roles; CSO representatives do not represent the majority views and interests of the country; and they are not legitimated by the parliamentary system. Moreover, several respondents noted that CSO representatives could contradict or challenge government positions during the negotiations, and that they might breach confidentiality.



**Fig 4.4** Survey Results

Responses from delegates whose delegation includes CSO representatives offer additional insights into government concerns about constraints resulting from CSO inclusion. Delegates of 14 governments (42%) rated as important or very important that CSO should be able to ‘speak on behalf of the national delegation in the negotiations’ (see panel *Sovereignty Issue 1* in Figure 4.4); delegates of 19 states (58%) responded that this function is rather unimportant or not important at all. Delegates from 26 (81%) indicated that ‘to give interviews to the press on behalf of the

government’ is not important or not important at all; delegates from 6 countries (19%) regarded this function as important or very important (see panel *Sovereignty Issue 2*). However, several respondents expressed fear that CSO representatives, while performing these functions, might take a different position than the one agreed to before the CoP, adopt positions that are not in line with the government’s policies; reveal sensitive governmental positions; or act beyond their roles and responsibilities. This evidence supports the constraints part of our argument, which holds that governments face a trade-off concerning the constraints against legitimacy gains associated with CSO inclusion.

In terms of the legitimacy issue, more than three quarters of the surveyed government delegates whose national delegation includes CSO representatives (N=30; 88%) regarded as important or very important the function of CSO representatives to ‘observe the negotiations and report back to the public at home’; only 4 respondents (12%) regarded this function as not important or not important at all (see panel *Legitimacy Issue 1*). A large majority of 27 government delegates (79%) agreed or strongly agreed that ‘the inclusion of civil society actors in the national delegations makes it easier for the government to convince citizens back home to support the government’s position’; only a small share of respondents (N=7; 21%) did not agree (see panel *Legitimacy Issue 2*).

## 4.5 Conclusion

In many areas of global governance, civil society participation has reached spectacularly high levels. In global climate politics, the empirical area this our research focuses on, around 70% of all national delegations include at least one CSO representative, and 18% of all members of national delegations at the 2011 climate CoP were CSO representatives. This means that CSO representatives are present on a massive scale – not only as observers from the outside, but also



as negotiators on the inside.

The theoretical argument developed in this chapter focuses on social networks and legitimacy in an effort to account for CSO inclusion in global governance. We argued that governments consider both constraints on government behavior and gains in legitimacy when deciding on whether to involve CSO representatives in global governance efforts. When trading off these two aspects, they are likely to pay attention to what other governments do. Social networks – the network of global IGO memberships – are likely to play an important role in this respect: we submit that, contingent on their extent of network centrality, governments are more likely to include CSO representatives if other countries do so.

The large- $N$  statistical analysis offers robust empirical support for this argument. Evidence from a survey conducted with government representatives from 50 national delegations to the 2011 climate CoP in Durban lines up well with the underlying theoretical assumption that the ‘contagion’ effect traveling through the global IGO network is driven by government considerations of legitimacy. This finding corresponds to the frequently made argument that civil society constitutes a ‘transmission belt’ between governments and their domestic citizenry (Steffek and Nanz 2007: 3).

Further research could expand on the findings of our study in at least two ways. First, more detailed surveys of government representatives are needed to better understand the reasons why CSO representatives are included, or not included, in national delegations in global climate governance. Such surveys should also identify variation across countries in respect to how autonomous included CSOs are from the respective government, and what constraints are imposed on CSO representatives within delegations. It would also be interesting to find out whether including CSO representatives has the presumed legitimacy increasing effect on domestic audiences. If governments are including CSO representatives to achieve legitimacy gains, and if they are taking well-informed decisions in this respect, we should observe that including CSO representatives makes domestic publics more accepting of procedural and perhaps even outcome aspects of global climate governance. Research to this end will have to rely on

surveys of national publics, rather than surveys of government representatives.

Second, climate policy might be a rather exceptional case in terms of its level of CSO involvement – though there is no systematic data that permits, at this point, comparison across global policy areas. It would be interesting, however, to study other policy areas based on our theoretical argument and empirical approach.

In practical policy terms, our results suggest that those interested in increasing civil society involvement in global governance should try and motivate as many states as possible to include CSO representatives in their national delegations. This would facilitate the diffusion of CSO involvement to other countries. Obtaining observer status in global governance fora, which is what most CSOs focus on, hinges on collective intergovernmental decisions to grant access to CSOs. In contrast, each country is free to decide on its own how its national delegation is composed. Civil society involvement could thus be promoted quite effectively via unilateral national steps that have ripple effects through the global governance network.

## 5 Is There a Democracy–Civil Society Paradox in Global Environmental Governance?

### 5.1 Introduction<sup>43</sup>

As emphasized above, much of the academic literature views increased civil society participation in a positive light. For instance, many authors claim that civil society can enhance the quality of policy-making by providing information, increasing fairness in procedural and outcome terms, enhancing transparency and accountability, and giving a voice to less powerful social groups in a country (Lipschutz 1992; Gordenker and Weiss 1995; Wapner 1996; Keck and Sikkink 1998). In fact, civil society is widely regarded as a crucial component of democratic, equitable, and cohesive societies (Diamond 1994; White 1994; Bailer et al. 2012)

ENGOS, on which this chapter concentrates, are a prominent example in this respect. The involvement of ENGOS in international environmental governance has grown enormously over recent decades. ENGOS have become regular participants in negotiation processes and exert clearly visible pressure on states (Betsill and Corell 2001; Corell and Betsill 2001; Zürn 1998). Existing research shows that ENGOS can affect international cooperation by generating new norms (Finnemore and Sikkink 1998), by motivating governments and legislatures to negotiate international agreements (Raustiala 1997), and by using ‘their technical, organizational, and lobbying skills’ (Chayes and Chayes 1993: 204) to enhance the ratification of, enforcement of, and compliance IEAs. Furthermore, the existing literature argues that both democracy and ENGOS tend to promote international cooperation, e.g. in the form of facilitating formal

---

<sup>43</sup> The following chapter is based upon an article that I co-authored with Thomas Bernauer and Vally Koubi. Therefore, I use the first-person plural throughout this chapter. At the time of submitting the habilitation, this chapter has been accepted for publication at *Global Environmental Politics*.

participation in IEAs, when treated as separate factors. Does this imply that the impact of ENGOs is stronger in democracies? Existing research assumes so but does not offer explicit theoretical arguments or empirical support for this assumption. This chapter addresses this research gap.

We outline three theoretical arguments for why ENGOs may not wield stronger influences in democracies. The net effect resulting from these arguments is a ‘democracy–civil society paradox’ in global environmental governance: we hypothesize that, generally, ENGOs can enhance states’ participation in IEAs. This positive effect, however, decreases as the level of democracy increases. This argument is counterintuitive, since democracy tends to be associated both with a more active civil society and greater international cooperation.

After the literature review, we elaborate on the democracy–civil society paradox with three arguments. The first focuses on the demand for environmental public goods. It notes that democracies are characterized by greater civil liberties and, hence, provide multiple channels – besides ENGOs – through which demands for ratification of IEAs can be expressed. The second argument considers political leaders’ incentives. We argue that democratic policy-makers have strong incentives to satisfy ‘green’ demands through the ratification of IEAs, even when ENGOs are weak or absent. The third argument focuses on collective action problems. Democracies are characterized by stronger competition for political influence among ENGOs. This may weaken the influence of ENGOs (relative to other political actors) on governments’ ratification behavior. All three arguments point in the same direction, namely towards a net effect of a democracy–civil society paradox: the very same forces that initially help ENGOs form and operate, i.e. democratic regime characteristics, eventually constrain their political influence when it comes to pushing democracies toward more cooperative behavior in global environmental governance.

We employ new data on ENGOs in 153 countries for the period 1973–2006 to assess the empirical relevance of the hypothesized effect, using a quantitative duration model approach that reflects our theory. The results strongly support the argument: the positive effect of ENGOs on countries’ ratifications of IEAs can be observed on average, but it is clearly weaker in democracies than in non-democratic regimes.

## 5.2 Determinants of IEA Ratification

The existing literature primarily focuses on five types of determinants of international cooperation as measured in the form of countries' participation in IEAs: (1) treaty design characteristics; (2) economic globalization; (3) political regime type; (4) ENGOs and their leverage; and (5) contingent behavior of countries, where a country's cooperative behavior is influenced by other countries' actions (Congleton 1992; Frank 1999; Fredriksson and Gaston 2000; Neumayer 2002a; 2002b; Murdoch et al. 2003; Beron et al. 2003; Roberts et al. 2004; Zilbauer 2005; Fredriksson et al. 2007; von Stein 2008; Bernauer et al. 2010; Perrin and Bernauer 2010). Some of the most robust empirical findings in this literature pertain to a positive impact of democracy and ENGOs, respectively, on countries' cooperative behavior.

With respect to democracy, several authors argue that democracies, relative to non-democracies, are more likely to provide environmental public goods, i.e. environmental quality, at the national level (Payne 1995; McGuire and Olson 1996; Lake and Baum 2001; Fredriksson et al. 2005) and are more inclined to cooperate in international environmental problem-solving efforts as well (Congleton 1992; Neumayer 2002a; Ward 2006; Bernauer et al. 2010). The underlying reasoning is that democratic governments depend on the median voter for their political survival and, therefore, tend to provide more (environmental) public goods than autocratic regimes (Bueno de Mesquita et al. 2003; Downs 1957). In democratic states, constituencies also benefit from greater civil liberties, e.g. freedom of speech, press, and association. These enable them to voice concerns over environmental problems more effectively both at national and international levels.

Empirically, Neumayer (2002a), for example, finds that democracies are more likely than autocracies to participate in several IEAs. He concludes that 'a spread of democracy around the world will lead to enhanced environmental commitment worldwide' (Neumayer 2002a: 158; see also Congleton 1992; Beron et al. 2003). Similarly, Fredriksson and Gaston (2000; see also von

Stein 2008) and Neumayer (2002b) examine the impact of various country characteristics on the time elapsed until countries ratified the UNFCCC, and treaties on endangered species, biological diversity, and ozone layer depletion. Both studies find evidence that democratic countries join these agreements faster than non-democracies. Also, Bernauer et al. (2010) analyze a sample of global environmental treaties between 1950 and 2000. They conclude that democracies are more willing to ratify such agreements, although this effect appears to stem from political systems' demand side: greater civil liberties allow for more public pressure on governments to behave cooperatively at the international level.

With respect to ENGOs, the existing literature claims that strong networks of ENGOs create political leverage over governments (see Binder and Neumayer 2005: 530). This leverage can be used to push governments toward more international cooperation – even in the absence of strong government incentives for doing so in the first place. ENGOs may, in this context, act as instigators, organizers, and amplifiers of public demand for more environmental protection. Increased public demand then creates incentives both for opportunistic and sincere policy-makers to negotiate and, subsequently, ratify IEAs.<sup>44</sup>

Empirical research on the impact of ENGO leverage, however, tends to suffer from incomplete or inaccurate data for the main explanatory variable, i.e. ENGOs. Still, several studies obtain some empirical support for the hypothesis that ENGOs positively influence environmental cooperation. For example, Roberts et al. (2004) use a cross-sectional design for studying the ratification rates of 22 IEAs between 1946 and 1999. They observe that one of the most important predictors of countries' cooperative behavior is pressure from civil society as measured by the number of ENGOs registered in a country. Roberts et al. (2004) conclude that 'the number of [E]NGOs in a nation appears virtually synonymous with its likelihood to participate in environmental treaties.' Moreover, Zilbauer (2005) examines ratification delays with respect to

---

<sup>44</sup> Many such agreements may, in reality, be weak or deficient in terms of their environmental problem-solving effectiveness. However, joining such agreements still is a highly visible political action by which policy-makers can demonstrate their environmental commitment to the public.

five IEAs<sup>45</sup> as a function of ENGO influence, among other factors. He finds that ENGOS reduce ratification delays in four out of five agreements.

Finally, Fredriksson and Ujhelyi (2006) argue that a large number of veto players in a political system makes lobbying more costly for ENGOS and, consequently, it reduces the positive impact of ENGOS on countries' treaty participation behavior. These scholars use duration models to analyze this argument for one particular IEA, the Kyoto Protocol. While it thus remains unclear whether this argument is relevant to other IEAs, the results support their theory: increased ENGO leverage motivated countries to ratify the Kyoto Protocol more rapidly, but this effect declines with more veto players in a given political system. In a related study, Fredriksson et al. (2007) argue that ENGOS find it easier to lobby policy-makers in countries with high levels of corruption. They find that ENGOS facilitated the ratification of the Kyoto Protocol, while this effect – perhaps counterintuitively – was stronger in more corrupt countries.

In the next section, we develop a theoretical argument that builds on an inconsistency between the conventional wisdom and the argument by Fredriksson and Ujhelyi (2006). The conventional wisdom assumes that the effect of ENGOS increases with higher levels of democracy, because environmental interests, i.e. the median voter demand for (environmental) public goods, can be promoted more effectively in countries with a long democratic tradition. Fredriksson and Ujhelyi (2006), however, claim that the positive effect of ENGOS on countries' participation in IEAs decreases with a higher number of veto players in the political system; and democracies tend to have more veto players than non-democracies.

---

<sup>45</sup> These IEAs are: *Convention to Combat Desertification*; *Cartagena Protocol on Biosafety*; *Copenhagen Amendment to the Montreal Protocol*; *Kyoto Protocol*; *Rotterdam Convention on Prior Informed Consent*.

### 5.3 ENGOs, Democracy, and the Ratification of IEAs

Typically, ratification is necessary for a country to be legally bound by an.<sup>46</sup> Although IEAs *per se* do not solve environmental problems, they are formal and legal expressions of countries' political commitment to address these problems. Joining such IEAs is usually costly, because it imposes at least some constraints on countries' behavior. In other words, ratification of IEAs is usually necessary, but not sufficient for solving international environmental problems.

We are concerned with the combined effect of ENGOs and political regime type on countries' ratification behavior vis-à-vis IEAs.<sup>47</sup> Although the partial and separate effects of both ENGOs and democracy on IEA participation are likely to be positive, we argue that the positive influence of ENGOs decreases at higher levels of democracy. This contingent effect of ENGOs is counterintuitive for two reasons. First, the existing literature offers convincing theoretical arguments as well as empirical evidence for the cooperation-promoting effects of both democracy and ENGOs. Second, democracy is associated with more civil liberties, which enable ENGOs to flourish. Hence, democracy is likely to influence both ENGOs and international cooperation, while ENGOs *per se* are also likely to have an effect on cooperation. Figure 5.1 summarizes the hypothesized effect. We arrive at this hypothesis on the basis of three interrelated arguments: the public demand for environmental protection, government incentives to meet such demand, and collective action problems that civil society might face in democracies.

#### 5.3.1 Public Demand for Environmental Protection

The first argument holds that the impact of ENGOs on a country's ratification of IEAs is likely to be less in democratic than non-democratic regimes, because democratic political procedures and

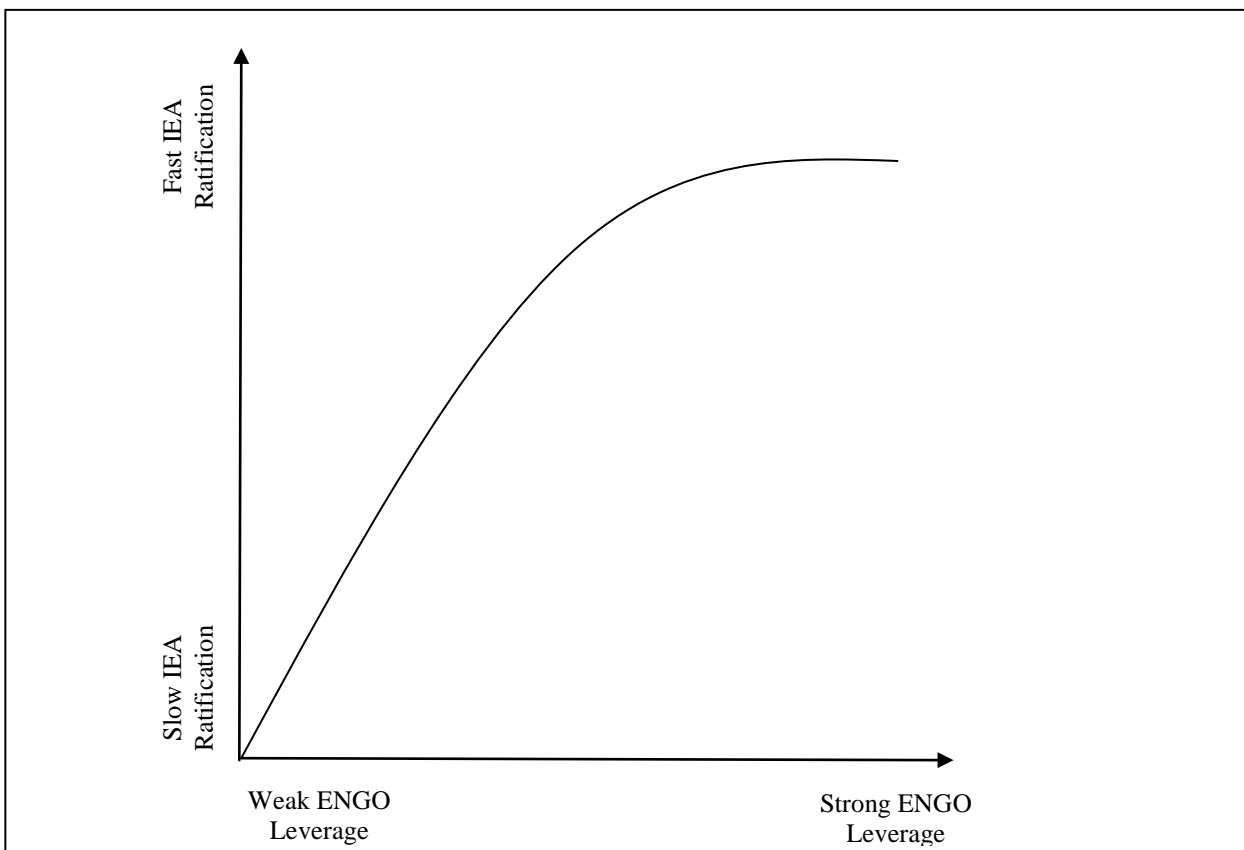
---

<sup>46</sup> We distinguish IEA ratification from participation in international negotiations and the signing of an IEA. The reason is that countries may participate in negotiating an IEA and/or also sign it, but ultimately fail to formally and fully join that agreement.

<sup>47</sup> More specifically, we focus on the time elapsed until ratification occurs.



processes are *per se* and *ex-ante* more conducive to ‘greener’ policies. Payne, for example, shows that democracies are more likely than non-democratic regimes to protect their natural environment, since democracy is characterized by more civil liberties, e.g. freedom of speech, press, and association (Payne 1995). These liberties imply that people are better informed by independent mass media and other sources about environmental problems and governmental policies. Democratic constituencies also have more opportunities to freely express their opinions and organize around alternative political views. Hence they can impose higher audience costs on policy-makers who renege on electoral promises (Slantchev 2006). Consistent with this argument, Page and Shapiro highlight that there is substantial congruence between public opinion and governmental policies in democratic systems, and that shifts in public opinion tend to cause policy changes in such systems – especially with respect to issues that are considered to be salient by society (Page and Shapiro 1983; see also Dahl 1956; Downs 1957; Arrow 1963).



**Fig. 5.1** Expected Effect of NGOs on Treaty Ratification in Democracies

Thus, for any given level of environmental risk exposure, people in democratic countries have greater opportunities than their counterparts in non-democratic systems to obtain information on

environmental problems and potential actions for their mitigation. Moreover, if people in democracies are concerned about environmental problems, they can engage in multiple types of action aimed at pushing their government toward stronger environmental commitment.

Consequently, more civil liberties are associated with a greater variety of sources of information as well as a greater scope and scale of potential actions of people vis-à-vis the government. These conditions reduce the importance of ENGOs as instigators, organizers, and amplifiers of public demand, because more civil liberties allow for channels other than ENGOs through which environmental information is disseminated and environmental concerns can be expressed. Therefore, the influence and importance of ENGOs as public demand instigators, organizers, and information providers decreases with higher levels of democracy in a political system. This, in turn, reduces the ENGO impact on ratification of IEAs.

### *5.3.2 Government Incentives to Meet Public Demand*

The median voter in democratic systems has a major impact on government provision of public goods, i.e. environmental quality in our case (Congleton 1992; Olson 1993; McGuire and Olson 1996; Niskanen 1997; Lake and Baum 2001). Democratic political leaders have strong incentives to satisfy their constituencies' environmental policy demands to obtain or retain political office (Downs 1957).

Bueno de Mesquita et al. (2003) argue that political selection processes influence the extent to which governments provide public goods relative to private goods. At the core of their argument on why democracies outperform non-democratic regimes in public goods provision is the rationale that political leaders must ensure the continuous support and satisfaction of their winning coalition. The latter is the group of people whose support is decisive for political leaders to obtain or stay in office. In contrast to democracies, non-democratic political leaders typically depend on the support of a smaller winning coalition. This coalition can be compensated with

private goods that are only beneficial for those supporting the leader. The benefits of public goods provision, however, are more uniformly distributed among the population. As a result, if non-democratic leaders decide to invest more in public goods rather than accumulating rents and supplying their small, supporting winning coalition with private goods, a country's elite would incur disproportionately high opportunity costs due to the spending of tax revenues and other resources on public goods provision. The median voter in a democracy, in contrast, incurs lower marginal costs of public goods provision, relative to the average member of the economic and political elite in a non-democracy. This circumstance generates incentives for democratic governments to provide public goods.

In other words, democratic political leaders are responsive to a larger winning coalition and lack sufficient resources to reward their comparatively large group of supporters with private goods. Therefore, they have to resort to the provision of public goods to ensure political support and survive in office. These political—survival considerations compel democratic policy-makers to provide more public goods – including environmental quality – compared to their non-democratic counterparts.

In our context, this means that joining an IEA – and doing so promptly – is an important opportunity for governments to signal their commitment to the provision of environmental public goods. Policy-makers in democratic systems have this incentive even if ENGOs are weak or absent, because it derives from general political system characteristics and median voter preferences, rather than ENGOs *per se*. As a result, the impact of ENGOs on states' behavior vis-à-vis IEAs is likely to be weaker in more democratic countries.

### 5.3.3 *Problems of Collective Action in Democracies*

Relative to non-democracies, democratic political systems provide more opportunities for ENGOs to form and operate (Dalton 2005), which seems conducive to ENGOs' leverage over

state actors. As a result, we should also expect the leverage of a strong ENGO network to drive governments toward more international environmental cooperation.

One factor that might work against this assumption is a collective action problem. Larger ENGO networks are more likely to encounter coordination problems that reduce their effectiveness in pushing governments toward greener policies (Olson 1965: 46ff; Chamberlain 1974). Although larger ENGO networks are likely to create more leverage, the marginal environmental policy returns are likely to become smaller with more ENGOs. Organizational, lobbying, and campaigning costs increase with the number of ENGOs because, as an ENGO network becomes larger, the interests of its members become more heterogeneous (Snidal 1994). Increased heterogeneity makes it more difficult to reach and maintain consensus on how government actors should be influenced, and to what end (Axelrod and Keohane 1985: 234f; North 1990: 57; Olson 1965: 36ff). Moreover, with an increasing number of ENGOs, enforcing actors' compliance is less likely to succeed.

Using a political market analogy, stronger competition between ENGOs for access to and influence over policy-makers may constrain the influence of ENGOs as a whole, as compared to an oligopolistic market, in which a small number of ENGOs competes for political influence. In the words of one ENGO member: 'when so many different [ENGO] actors are drawn into the process, there is a danger that our demands may be blunted [...]. Consequently, we may end up with a 'lowest common denominator' which is no better than the kind of compromises diplomats engage in' (Bernstein et al. 1992).

Increased competition of this kind is more likely to occur in democracies because the latter provide more opportunities for ENGOs to form and operate. Again, this means that the ENGO effect on participation in IEAs should be positive on average, but decreases with higher levels of democracy in a political system. This argument is somewhat similar to Fredriksson and Ujhelyi's who claim that with more veto players the positive impact of ENGOs on countries' ratification probability decreases (Fredriksson and Ujhelyi 2006). However, our theoretical rationale for this effect is different. While Fredriksson and Ujhelyi (2006) assume that veto players have resolved

their collective action problem, we view such problems as one of several factors that may reduce ENGO leverage.

In sum, the three arguments developed in this section reinforce each other. We should expect a positive effect of ENGOs on countries' participation in IEAs. But this impact is likely to be smaller or may even disappear in countries that are highly democratic. Although the three arguments outlined here are distinct, we do not regard them as separate causal mechanisms that require a separate and explicit comparison, but rather as a set of related theoretical reasons for expecting a declining ENGO effect at high levels of democracy. Consequently, the following empirical analysis focuses on the net effect of ENGOs on countries' participation in IEAs.

## **5.4 Research Design**

### *5.4.1 Dependent Variable and Methodology*

The empirical evaluation of our argument focuses on countries' ratification behavior vis-à-vis IEAs, and in particular the time elapsed until ratification occurs. We concentrate on duration because we interpret the differences in time that countries need to ratify an IEA as the reflection of their relative preference intensities. More rapid ratification signals a strong commitment to global environmental cooperation (Fredriksson and Gaston 2000). Hence, we define the analysis' dependent variable as the time (in years) elapsed between the date when an IEA becomes open for ratification and the date a country ratifies that agreement.

The data for ratification behavior are taken from Bernauer et al. (2010). Following these scholars, we treat different legal expressions of formally joining a treaty, e.g. accession, as equivalent to ratification. We also drop treaties that do not deal with environmental issues as

central concerns. And finally, we omitted IEAs that were open for ratification before 1973<sup>48</sup> as well as IEAs that are not open to all countries globally. The resulting dataset covers 153 countries and 268 global environmental treaties between 1973 and 2006.<sup>49</sup> The unit of analysis is the IEA–country–year, i.e. each IEA is paired with each country that could potentially ratify this IEA in a given year. IEAs enter the dataset as soon as they become open for ratification. Each IEA–country pair remains in the dataset until the year the respective country ratifies the IEA and is then dropped.<sup>50</sup> All of our explanatory variables described below vary over time. Because a change in any of these variables requires a new spell or observation, our unit of analysis is equivalent to such a specific spell. In total, we obtain 555,175 spells. Out of the 41,004 IEA–country pairs in the dataset, 31,077 are right censored, i.e. ratification did not take place by 2006, 2002, and 2000, respectively. The average ratification duration of a country is 9.67 years.

Since we refrain from imposing a particular functional form of the baseline hazard, we estimate Cox proportional hazards models. This leaves the duration dependency unspecified and focuses the empirical analysis on how the covariates shift the baseline hazard. We tested all models and the included variables for a possible violation of the proportionality assumption. These tests suggest that the proportionality assumption is indeed violated in some of our models. However, including interaction terms for all explanatory variables with some pre-defined function of time (Box–Steffensmeier and Zorn 2001; Box–Steffensmeier, Reiter, and Zorn 2003; Box–Steffensmeier and Jones 2004: 131ff) does not change the substance of our results. More specifically, we obtain opposite signs and very small coefficients for our variables of main interest, i.e. *ENGO*, *Democracy*, and the interaction term between these two. A sign opposite to that of the constituent term indicates decay in the original effect. The rate of the overtime trend is indicated by the coefficient for the interaction with time in relation to the constituent term. If the interaction term with time is small in comparison, the effect changes slowly over time; if it is

---

<sup>48</sup> We cross-checked our findings by including pre-1973 data. The results do not change in substantive ways.

<sup>49</sup> The time-period covered by the analysis varies due to data limitations for most of our explanatory variables. While Model 5.1 below focuses on the maximum period possible, i.e. 1973–2006, Models 5.2 and 5.3 are based on data for 1973–2002, and Model 5.4 on data for 1973–2000.

<sup>50</sup> Keeping an IEA–country observation in the data after ratification occurred would bias our findings, since this treatment would induce that a country ratifies again and again in each subsequent year.

large, then the effect changes quickly. Exponentiating the ratio of the constituent coefficient to the interaction coefficient indicates the point in time at which an effect ‘flips’ from positive to negative or vice versa (Box–Steffensmeier and Zorn 2001). For example, we estimated that the effect of *ENGO* dies out after about 9,902 years in Model 5.1 below. Hence, we decide to leave out interaction terms with a function of time to facilitate interpretation.

#### 5.4.2 Explanatory Variables

The two main explanatory variables are the political leverage of ENGOs and a country’s level of democracy. We define *ENGO* leverage in terms of the number of national ENGOs (see also Fredriksson and Ujhelyi 2006) registered in a country.<sup>51</sup> We collected the data for the time period 1973–2006 in the archives of the International Union for Conservation of Nature (IUCN). The IUCN claims to be ‘the world’s largest and most important conservation network,’ with a ‘mission to influence, encourage, and assist societies throughout the world to conserve the integrity and diversity of nature.’ Its members include national and international ENGOs, government agencies, and scientists from 181 countries. Although the IUCN covers most countries of the world, it is essentially an umbrella organization where membership is not mandatory and ENGOs do not have to register *per se*. As a result, our data collection efforts might have omitted some minor ENGOs that are not registered with the IUCN. However, our approach proved to be more efficient than collecting ENGO data from other sources and due to IUCN’s broad and extensive coverage of countries, we believe that we were able to generate a valid and reliable proxy for the political leverage of ENGOs.

To measure a country’s level of democracy, we use the combined *Polity2* item from the Polity IV project (Marshall and Jaggers 2004) that ranges from –10 (full autocracy) to +10 (full democracy). Since the original data do not include information for microstates, we impute

---

<sup>51</sup> Despite their national characteristic, these ENGOs are involved in international issues and act at the global level – otherwise they would arguably not interact with the IUCN.

missing values with data from Gleditsch (2008), who provides information on these countries until 2002. In this respect, an anonymous reviewer was concerned that our results might pick up a conditioning effect of veto players instead of democracy (Fredriksson and Ujheli 2006). Indeed, there is a highly significant correlation between *Democracy* and Henisz's (2002) *POLCONIII* index in our dataset (0.7544). However, the correlation between *Democracy* and *ENG0* and between *Democracy* and the *POLCONIII* index is 0.31 and 0.90, respectively, while tests showed that the two estimates differ significantly. We also re-estimated our baseline models with Henisz's *POLCONIII* index instead of *Democracy*: the effect of the interaction term of *ENG0* and *POLCONIII* is insignificant. These results indicate that our results for the *Democracy-ENG0* interaction term do not pick up the conditioning effect of veto players despite the fact that *Democracy* and Henisz's *POLCONIII* are highly correlated. Finally, to model the conditional effect of *ENG0*, which serves to evaluate the democracy—civil society paradox, we also consider a multiplicative term between *Democracy* and *ENG0*.

With regard to control covariates, we employ the variables suggested in Bernauer et al. (2010) in order to capture alternative factors that may influence ratification behavior (see also Congleton 1992; Frank 1999; Fredriksson and Gaston 2000; Neumayer 2002a; 2002b; Murdoch et al. 2003; Beron et al. 2003; Roberts et al. 2004; Zilbauer 2005; Fredriksson et al. 2007; von Stein 2008; Perrin and Bernauer 2010). First, we include a country's membership in international organizations (*IO Membership*), using the number of IOs of which a country is a member in a given year. The data are taken from the Correlates of War Project (Singer 1988). Second, we include a country's trade intensity, measured as the ratio of the sum of exports and imports to GDP (*Trade Intensity*). The data come from Gleditsch (2002). Third, we add a variable counting the total number of states in the international system that ratified a given IEA already (*# of Countries Ratified*). We also include two variables measuring the percentage of countries from the same geographical area (*% of Region Group Ratified region*) and the percentage of countries from the same income group that ratified a given IEA already (*% of Income Group Ratified*). Fourth, we take into account income, measured as the log value of GDP per capita (*GDP per*



*capita*). Given the arguments on the Environmental Kuznets Curve, we also include the squared of this item. Fifth, the state of the domestic environment may also influence ratification behavior. Thus, we add the log of SO<sub>2</sub> emissions per capita (*SO<sub>2</sub> per capita*), as this type of pollution is arguably the most common form of air pollution. Finally, we include the log of GDP to capture a country's economic power (*GDP*).

## 5.5 Empirical Findings

Table 5.1 summarizes the main results of our empirical analysis. We report non-exponentiated coefficients: higher values for each explanatory variable signify faster ratification (i.e. positive coefficients indicate an increasing hazard and negative coefficients indicate a decreasing hazard). We begin with a bivariate model that only includes *ENGO*. In Model 5.2, we add *Democracy*, while Model 5.3 constitutes our baseline model, including *ENGO*, *Democracy*, and their interaction term. Model 5.4 adds the control variables.

Table 5.1 shows the likelihood of ratification increases by 3 % for each additional ENGO active in a country (Model 5.1). With the inclusion of *Democracy* (Model 5.2), this positive and rather substantial effect changes to 1.8 % with a one-unit increase in *Democracy* leading to a 6.2 % increase in the likelihood of ratification. Yet, only Models 5.3 and 5.4 include the interaction term that directly tests our argument. We cannot, however, directly interpret the components of a multiplicative specification in Table 5.1 (see Braumoeller 2004; Brambor, Clark, and Golder 2006). Therefore, we re-calculated the non-exponentiated coefficients for *ENGO* according to *Democracy* to allow for a substantive interpretation (see Braumoeller 2004: 815ff). Figure 5.2 depicts these findings.

This figure offers strong support for the democracy-civil society paradox. Although we still see a positive contribution of ENGO leverage to faster IEA ratifications, this effect is stronger for

non-democratic countries, and the influence of *ENGO* seems to have only a marginal impact in democracies. The estimated risk of ratification increases by 5.6% if one more ENGO is active in a full autocracy. This ENGO effect is much stronger than in Models 5.1 or 5.2, which do not consider the interaction between *ENGO* and *Democracy*. The impact of *ENGO* then decreases and reaches a positive and still significant value of 1.5% (Model 5.3) in full democracies.

**Table 5.1** Results from Cox Proportional Hazards Models for Time Elapsed until IEA Ratification

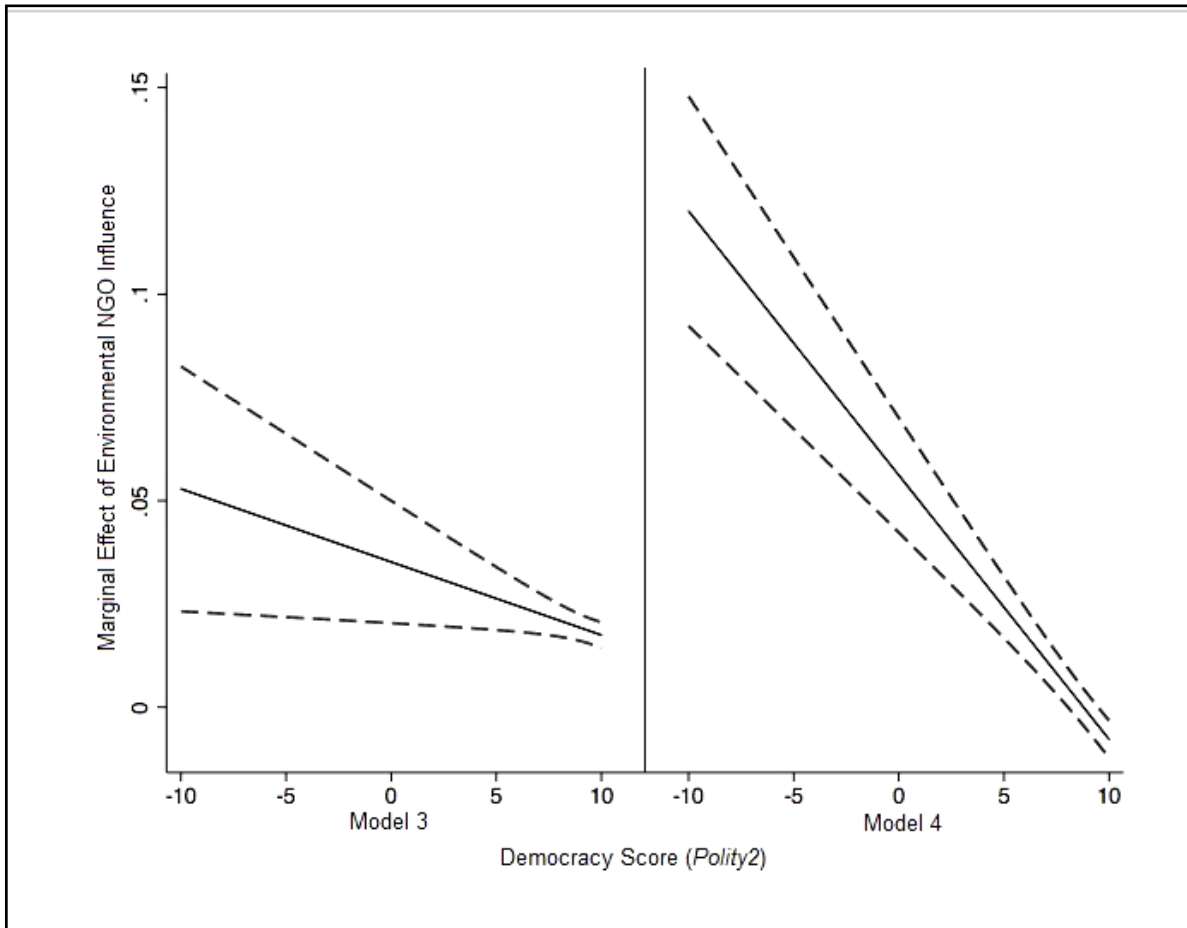
	Model 5.1	Model 5.2	Model 5.3	Model 5.4
ENGO	0.030 (0.001)***	0.018 (0.002)***	0.035 (0.008)***	0.056 (0.007)***
Democracy		0.062 (0.003)***	0.065 (0.003)***	0.029 (0.004)***
ENGO*Democracy			-0.002 (0.001)**	-0.006 (0.001)***
IO Membership				0.013 (0.001)***
Trade Intensity				-0.083 (0.035)**
# of Countries Ratified				-0.013 (0.001)***
% of Income Group Ratified				0.031 (0.001)***
% of Region Group Ratified				0.050 (0.001)***
GDP per capita				1.544 (0.317)***
GDP per capita <sup>2</sup>				-0.091 (0.019)***
SO <sub>2</sub> per capita				0.062 (0.019)***
GDP				0.003 (0.027)
Obs	371,297	248,282	248,282	204,048
Log Likelihood	-47,114.71	-37,435.78	-37,433.33	-29,826.90
Time at Risk	350,371.8	228,270	228,270	184,741.1
Time Period	1973–2006	1973–2002	1973–2002	1973–2000
Likelihood Ratio $\chi^2$	371.97***	822.03***	826.94***	10,360.02***

Standard errors in parentheses

\* significant at 0.1 level, \*\* at 0.05 level, \*\*\* at 0.01 level (two-tailed)

This figure also reveals that the slope of the marginal *ENGO* effect is quite negative and steep, so that we even obtain a negative and significant coefficient estimate for *ENGO* in Model 5.4 when looking at countries that have a *Democracy* score of +9 or higher. This negative effect is substantively rather small, however, with an estimated risk of ratification of about -0.04%. We interpret this result as indicating that the marginal effect of ENGO leverage disappears in highly

democratic countries, and that more ENGO leverage may, in the extreme, even slow down ratification in such states – albeit to a very small degree.



**Fig. 5.2** Effect of ENGO Leverage on Treaty Ratification, Conditional on Democracy

*Note:* Dashed lines indicate 95% confidence interval

Figure 5.3 illustrates our key finding in a more nuanced form. We recoded *ENGO* into four categories and estimated different survival functions that are based on the estimates in Model 5.4. The categories of the recoded *ENGO* variable reflect the main characteristics of the original *ENGO* variable: 0=no ENGOs registered in the country; 1=1–29 ENGOs registered in the country; 2=30–59 ENGOs registered in the country; 3=60–82 ENGOs registered in the country. Using these categories, we examine non-democracies (countries with a *Democracy* score of less

than +7) and democracies.<sup>52</sup>

This figure mirrors the results shown in the right panel of Figure 5.2. ENGO leverage fosters speedy ratification of IEAs. ENGOs have a powerful marginal effect in non-democratic countries, but this effect disappears in highly democratic countries, whereas ENGOs have a powerful marginal effect in non-democratic countries. The left panel of Figure 5.3 indicates that the difference in impact between ‘no ENGOs’ and ‘1–29 ENGOs’ is around –6% in non-democracies. This means that more ENGO leverage in non-democratic countries has a strong ratification-promoting effect.

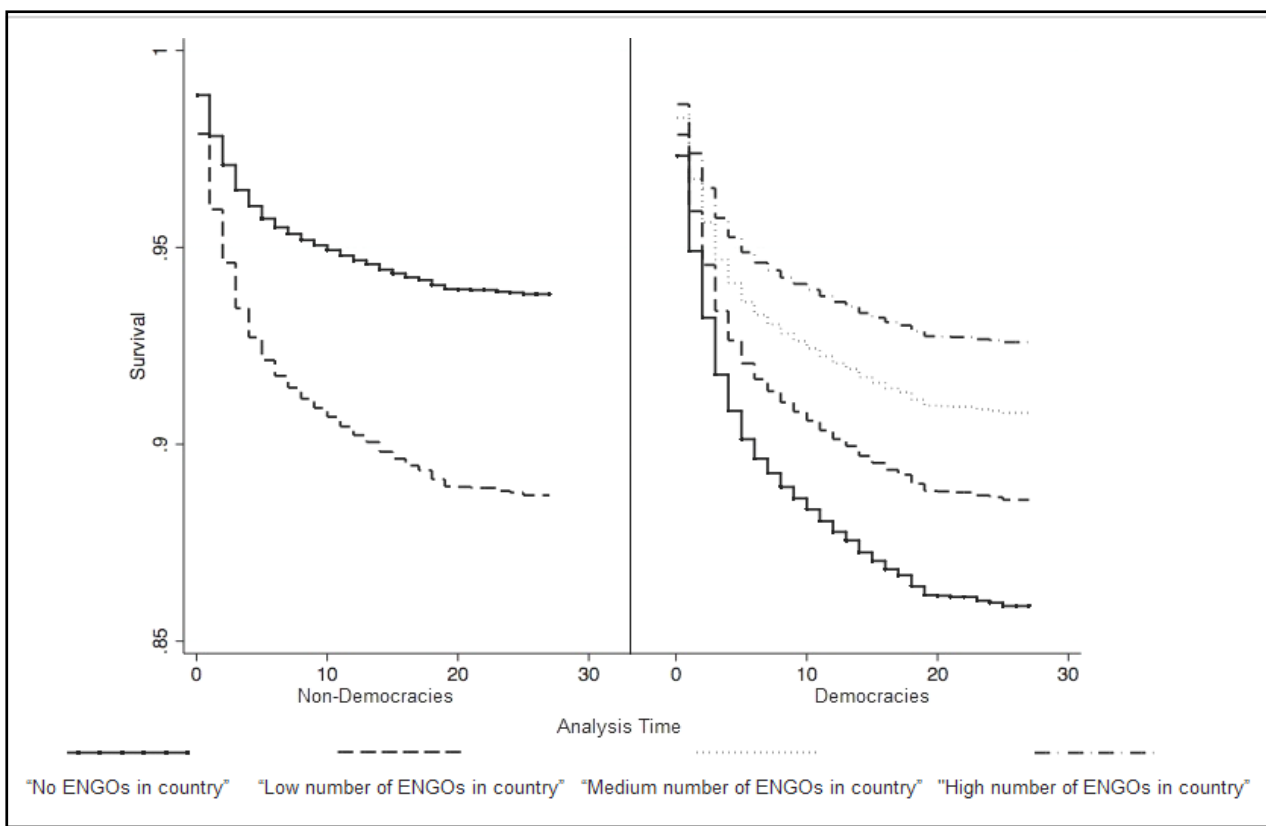
Figure 5.3 also points to an unexpected result. We observe that ratification speed increases by almost 15% points in highly democratic countries that lack ENGO leverage. We are reluctant to interpret this finding in the sense of ENGOs make global environmental treaty participation more difficult in democratic countries. One possible interpretation of this result is that highly democratic governments in a state with a strong ENGO network are likely to face stronger pressure to fully and more rapidly implement the respective international obligations. Such countries are also likely to contract more ambitious obligations in a given IEA. One example is the Kyoto Protocol, which allocates different emission reduction targets to different countries. To the extent that these assumptions hold true, highly democratic countries with a strong ENGO network are likely to face higher implementation costs, relative to highly democratic countries that lack ENGO leverage. In other words, it is possible that the impact of ENGOs declines over the ratification process in highly democratic countries with increases in demand and, therefore, implementation costs. The US, which actively participated in negotiating the Kyoto Protocol, but then failed to ratify this treaty, is a prominent example here.

Concerning the control variables, the effects of *IO Membership*, *Trade Intensity*, *% of Region Group Ratified*, *GDP per capita* and its squared term, and *SO<sub>2</sub> per capita* are all in line with results reported in the existing literature. Membership in international organizations significantly decreases the duration until ratification occurs. The same holds for the percentage of countries of

---

<sup>52</sup> One caveat here is that neither category 2 nor 3 empirically appear in non-democratic states.

the same region that ratified an IEA, and the indicator for domestic environmental conditions. We also find evidence for a curvilinear relationship between *GDP per Cap* and ratification duration. A country's trade openness contributes to slower ratification. In contrast to findings by Bernauer et al. (2010), ratification by a given country becomes slower when a larger share of all other countries has already ratified. Similarly, a larger share of ratifiers in the same income group has a ratification-retarding effect. The impact of countries' economic size is insignificant.



**Fig. 5.3** Estimates of Survival Functions, According to *ENGO* Leverage and Regime Type

*Note:* The two panels show survival functions based on semi-parametric Cox model estimations while all other variables are held at their mean values

## 5.6 Conclusion

The existing literature offers well-developed arguments and empirical evidence for why democracy and civil society are likely to foster international cooperation. In dealing with both

factors separately, however, it assumes that the combined effect is also positive and at least as strong – or perhaps stronger – as the sum of their individual effects. This chapter addresses this conjecture from a theoretical viewpoint, with an empirical focus on how ENGO leverage influences countries' participation in global environmental agreements. We developed three distinct theoretical arguments, all of which point to the same outcome, i.e. towards a democracy–civil society paradox in global environmental governance. The resulting claim is that the impact of ENGOs on international cooperation is generally positive but is likely to decrease or even disappear at high levels of democracy. This proposition cuts against conventional wisdom and appears paradoxical because democracy is generally associated both with a more active civil society and more international cooperation.

We based the empirical analysis on a data set that combines information on IEA ratifications with new data on ENGOs for the time period 1973–2006. The results strongly support our theory. Although the marginal effect of an additional ENGO on the ratification of IEAs is strong and positive in the case of non–democracies, this effect fades and, in the extreme, becomes negative in highly democratic countries. To our knowledge, this is the first study to systematically examine the combined effect of ENGOs and democracy on participation in IEAs.

From a normative perspective, our results cannot – and, we think, should not – be used to advocate the obsolescence or irrelevance of ENGOs in democracies. Our argument concerns the *marginal* rather than the absolute political leverage of ENGOs. It means that each additional ENGO in a less democratic system helps promote that country's cooperative behavior in global environmental governance more than an additional ENGO in a democracy. The obvious policy implication is that strengthening ENGOs in less democratic countries can help considerably in overriding the generally negative autocracy effect on international cooperation.

Our findings suggest interesting questions that are worth pursuing in further research. For instance, it would be useful to move beyond the one–dimensional democracy–autocracy scale and investigate the role of civil society in different types of democratic and autocratic regimes. Second, our research addresses only one aspect of global environmental governance, i.e. treaty

ratification. Further research could build on our efforts and study the joint impact of civil society/ENGOS and democracy in other facets of international cooperation, such as agenda-setting, negotiation, or treaty implementation. Finally, it would be interesting to examine whether our theoretical argument is empirically relevant in other policy areas, such as human rights or arms control, where civil society actors have very actively pushed for more international cooperation as well.





## 6 The Impact of Environmental Interest Groups in International Negotiations: Do ENGOs Induce Stronger Environmental Commitments?

### 6.1 Introduction<sup>53</sup>

As demonstrated at various points above, ENGOs increasingly participate as observers in international environmental negotiations or actively intervene by directly exerting pressure during the bargaining of states. As a result, both policymakers and scholars perceive ENGOs as important actors in global environmental governance (e.g., Betsill 2006; Charnovitz 1997; Weiss and Gordenker 1996; see also Finger 1994; Princen 1994; Raustiala 1997; Arts 1998, 2003; Newell 2000).<sup>54</sup> In one avenue for exerting pressure, ENGOs participate in official state delegations, which generally increases the likelihood to directly exert influence on policymakers.<sup>55</sup> This stems from the fact that ENGOs are then not excluded from the unofficial sessions between governments, which are usually the decisive places for drafting conference declarations or treaties (Clark et al. 1998: 18). Hence, they actively participate in informal backdoor diplomacy, receive official state documents, and are able to present proposals (Raustiala 1997; Clark et al. 1998; Gulbrandsen and Andresen 2004). Gulbrandsen and Andresen (2004: 73) conclude accordingly for their analysis that ENGOs are likely to ‘have the most far–

---

<sup>53</sup> The following chapter is based upon an article that I co-authored with Carola Betzold. Therefore, I use the first-person plural throughout this chapter. At the time of submitting the habilitation, this chapter has been accepted for publication at *International Environmental Agreements*.

<sup>54</sup> We focus on ENGOs defined as not-for-profit organizations that have not been established by state actors and whose aim is environmental protection. Thus, we exclude business associations and other groups that represent commercial interests (Betsill 2006: 175). We further limit our analysis to institutionalized global politics. More direct ways of shaping international environmental governance are not taken into account, but see Wapner (1995, 1996).

<sup>55</sup> As stated above, we do not imply that participating in state delegations is the exclusive avenue for exerting influence.

reaching influence on [...] negotiations if they foster ways to work closely and collaboratively with key negotiators.’

However, international negotiations remain primarily an inter-governmental affair and states keep the prerogative to determine which non-governmental actors may participate. In fact, only organizations that are accredited by the contracting parties can obtain observer status or direct access to the official negotiating parties, and countries oppose the involvement of ENGOs in many cases. That being said, even accredited ENGOs with an observer status have limited access to the negotiating states, since they are excluded from ‘informal-informals’ and other closed-door meetings. Ultimately, these imposed restrictions are likely to have implications for bargaining processes and outcomes of international environmental negotiations.

We take this as the starting point for our research: are more ENGOs more influential? Furthermore, how influential are ENGOs really and under what circumstances? Although a considerable body of the literature critically evaluates the role and influence of ENGOs in global environmental politics, previous work mainly focused on tracing the pathways through which ENGOs bring in their interests into particular negotiations such as those on desertification (Correll 2008) or whaling (Skodvin and Andresen 2008). Existing research predominately consists of qualitative case studies that make it difficult to infer general claims about the conditions for non-state impacts on environmental governance (Betsill 2006: 185). As we will demonstrate in the next section, the theoretical work, on one hand, is in fact inconclusive on this issue, and, on the other hand, we largely lack comparative as well as quantitative approaches across a broad set of environmental negotiations.<sup>56</sup> It may thus not come across surprising that the argument on incorporating ENGOs in environmental policymaking for achieving better, i.e., more ‘environmental-friendly’ outcomes has not yet been put to a systematic test.

---

<sup>56</sup> For some notable quantitative exceptions see, e.g., Bernauer et al. (2010), Fredriksson and Gaston (2000), Fredriksson et al. (2005), Fredriksson, Neumayer, and Ujhelyi (2007), Neumayer (2002), Roberts et al. (2004), and von Stein (2008). Those studies, however, exclusively look at states’ ratification behavior after the negotiations as such – which is related to our research, but essentially very different from the dependent variable we employ. Furthermore, those studies largely treat (E)NGOs – if dealing with them at all – as a control item, based on explanations from the domestic level. Our work focuses on the international level, though.

We, therefore, seek to contribute to the literature in two ways. First, we develop a theoretical rationale that explains how ENGO access and a larger number of ENGOS actively participating during bargaining processes can contribute to stronger environmental commitments of states. Framing how ENGOS interact with states in the negotiating environment in similar terms of formal bargaining theory – primarily information provision and commitment problems – that has been explicated by Fearon (1995) or Powell (1999) will help clarifying this. Second, we empirically evaluate the impact of ENGOS in 23 environmental regimes using quantitative data from 1946 to 1998. In other words, we respond to the ‘demand for general conclusions across cases’ (Betsill and Corell 2001: 68) by using a quantitative research design for testing whether the number of ENGOS actively participating by providing information at an international environmental negotiation, as well as their access, i.e., the opportunities to provide input to the negotiations, are systematically related to the influence of ENGOS on negotiation outcomes.

Our analysis suggests that ENGOS do indeed positively affect environmental negotiations. More specifically, we find that both a higher degree of ENGO access and a larger number of ENGOS actively participating in official negotiations are positively related to states’ environmental commitments, i.e., their depth of cooperation (see Downs et al. 1996). Finally, the complementary effects of these variables imply that the impact of ENGO access on the prospects for strong environmental commitments should vary conditional on the number of ENGOS actively participating. The chapter obtains evidence for an interaction, although the results go against conventional wisdom as we find that ‘more is not necessarily better.’

The remainder of this chapter is structured as follows. In the next section, we review the literature on ENGO influence in global environmental governance, and then develop our theoretical rationale on how ENGO access and the number of active ENGO participants can affect states’ environmental commitments. Afterwards, we outline the research design by describing the data, the methodology, and our variables. The succeeding section presents the results from the empirical analysis, while the last section concludes with a summary of our findings and a comprehensive discussion.

## 6.2 The Influence of ENGOs in Global Environmental Governance

### 6.2.1 *Do ENGOs Matter in International Environmental Politics?*

A considerable part of the literature examining ENGOs and their activities in environmental governance documents the strategies used by these organizations to influence environmental negotiations, and assesses the extent to which these strategies are effective (Betsill 2006). First and with regard to the typology of strategies, most scholars distinguish between *insider* and *outsider* strategies (Betsill 2006; Beyers 2004). The former refer to a set of activities that seek to affect negotiators directly at the bargaining table via the provision of expert advice or policy analysis. Corell and Betsill (2001: 87) emphasize here that ‘the provision of knowledge and information is the key ENGO resource for influence’ (see also Betsill and Corell 2008; Gerdung 2004). The latter aims at creating pressure from the outside by shaping public opinion (see e.g., Gulbrandsen and Andresen 2004; Betsill 2006). In the following, our work addresses both types of strategies.

Through their diverse activities, ENGOs may have considerable influence over both the negotiation process and its outcome (Corell and Betsill 2001; Corell 2008).<sup>57</sup> Raustiala (1997), for example, claims that influential ENGO access is likely to enhance the ability of regime members to address environmental problems more effectively. Transboundary environmental problems became more complex and more severe over the past. In this context, ENGOs might provide policy advice, help monitoring states’ commitments, or facilitate signaling between

---

<sup>57</sup> Against the background of Putnam’s (1988) two-level game, it is worth noting that we largely focus on the international level, i.e., Putnam’s (1988: 436) first stage. Putnam’s (1988: 436) second stage primarily deals with domestic-level discussions about whether to ratify an agreement, e.g., the literature we pointed to in footnote 3. With regard to the latter, research also indicates that domestic lobbying may be more effective in attaining (E)NGO influence (e.g., Skodvin and Andresen 2008; Kalt and Zupan 1984; Durden, Shogren, and Silberman 1991; Fowler and Shaiko 1987; Cropper et al. 1992; Smith 1995). However, neither does our approach implicitly assume that ENGOS can only influence negotiation outcomes at the international level nor does it fully neglect the exertion of influence at the domestic level. In fact, ENGOs are usually mass membership organizations. As representatives of voters, ENGOs then shape public opinion and signal electoral (i.e., domestic) preferences to policymakers. Further, ENGOs may signal voter preferences even in relatively closed negotiations through outsider strategies such as protests, demonstrations, or other types of direct action outside the negotiation forum.

governments and constituents (see also Raustiala 2001). Thus, ‘most scholars agree that [E]NGOs do make a difference in global environmental politics’ (Gulbrandsen and Andresen 2004: 54).

Paterson (1996) also claims that ENGOS were important actors during the negotiations of the 1992 UNFCCC and the subsequent Kyoto Protocol (see also Arts 1998; Betsill 2002; Carpenter 2001; Newell 2000). Here, it seems that most influence occurred during the negotiation process and the persistent lobbying of ENGOS left a mark on the negotiation outcome. Betsill (2002: 58), for example, believes that ‘without ENGOS, the final agreement might have been even weaker.’

More recently, however, the massive presence of – and pressure from – ENGOS did not result in a strong agreement in the case of the Copenhagen Accord, which is widely perceived as a failure (e.g., McGregor 2011; Dimitrov 2010). Consequently, it seems that ENGOS participate in and shape all these regimes, but the degree to which ENGOS are able to insert their views into environmental agreements does differ. In fact, although ENGOS do have the potential to be influential during states’ bargaining processes, states as the crucial actors in environmental negotiations may not necessarily alter their behavior in response to those activities, which ultimately induces that ENGOS do not have much impact (Skolnikoff 1990). Similarly, ENGOS themselves – unlike Paterson (1996) – acknowledge that they were unsuccessful in shaping the outcome of the 1992 UNFCCC negotiations (Rahman and Roncerel 1994). Björkbom (1999: 406) argues the same when pointing out that ‘NGO pressure in the negotiating room has had but a marginal influence on the results of the negotiations’ of the CLRTAP (see also Albin 1999; Raustiala 1997). He contends that the main reason for this relatively poor evaluation is that ENGOS had only limited access to the negotiations and, thus, were less likely to exert pressure.

Likewise, Albin (1999: 372) demonstrates that the ‘participation of ENGOS in international fora remains largely unofficial, ad hoc, or subjected to the preferences of national governments.’ Although she does not make explicit statements about the actual impact of this, Albin seems to imply that ENGOS in international environmental negotiations are likely to have little effect. Albin (1999: 373) claims further that the uncertainty about the actual influence of ENGOS on international environmental negotiations might be caused by the lack of theoretical work.

In sum, although we believe that the literature produced highly substantial theoretical research since Albin (1999), we still face theoretical ambiguity. Further, this overview not only demonstrates that there is a lack of theoretical consensus on the impact of ENGOs in international negotiations, but also that empirical findings remain mixed. We seek to contribute to addressing these issues. More specifically, Betsill (2008) identifies the *rules of access for ENGOs* and their *number* as important factors that might explain variation in ENGOs' exerted influence. Hence, in the following we develop a theoretical framework that focuses on the degree of access that ENGOs might have and the issue if more ENGOs can lead to better outcomes.

### 6.2.2 *Does a Higher Degree of ENGO Access Imply Better Outcomes?*

Although we concur that ENGO access does not necessarily lead to more effective and 'pro-environment' outcomes, it is an important factor for gaining influence over the negotiators (Betsill 2008; see also Betsill and Corell 2001; Fisher and Green 2004; Fisher 2010, 2011). Hochstetler et al. (2000: 604) emphasize here that the influence of ENGOs has been growing over the past, but they still lack 'the procedural access [that] is required to become consistently strong brokers' (see also Friedman et al. 2005). Yamin (2001: 157) similarly argues that 'the ability of ENGOs to influence policymakers depends on [...] the degree of access ENGOs have to policymakers and relevant documentation.'

It is, thus, worth emphasizing that environmental governance processes have opened up considerably over the past decades and are 'among the most transparent, participatory, and accessible realms of global governance to state and non-state actors alike' (Bernstein 2005: 140). Yet, many meetings remain closed to observers – in particular toward the end of negotiations when core actors decide on compromises and last-minute trade-offs (Yamin 2001: 158). However, we contend that ENGOs can circumvent such restrictions when their representatives have more direct access possibilities to state actors via, e.g., the participation in national

delegations. As members of national delegations, their access to negotiations is privileged and not subject to restrictions. Further, members of national delegations are allowed to speak more frequently than ‘classical’ observers, who typically have very limited opportunities to take the floor, e.g., only at the opening of plenary sessions (Yamin 2001: 158; see also Betsill 2006).

Put differently, better access facilitates ENGO input in negotiation processes and should also lead to bargaining outcomes that reflect ENGO positions more closely (see McGregor 2011). Therefore, we expect a positive relationship between ENGO access and states’ commitment to stronger ‘pro–environmental’ agreements:

**Hypothesis 6.1:** The higher the degree of ENGO access during international environmental negotiations, the higher the commitment level of states afterwards.

### *6.2.3 Does a Larger Number of ENGOs Imply Better Outcomes?*

As stated above, Betsill (2008) not only argues for the rules of ENGO access, but also their *number* as important factors determining variation in ENGO influence. Accordingly, she (Betsill 2008: 203) notes that ‘increasing ENGO participation in and influence on multilateral negotiations on the environment and sustainable development leads to better outcomes.’ This is because ENGOs that actively participate during environmental negotiations primarily provide information to the bargaining states. In turn, we argue that we observe a better/higher provision of information if more ENGOs can contribute, which eventually leads to higher environmental commitments.

In more detail, there are two types of information that ENGOs can bring into environmental negotiations. On one hand, ENGOs have information and knowledge that might not be taken into consideration otherwise. ENGOs often represent the voiceless, i.e., individuals, people, and groups that are not well represented in policymaking at any level, such as indigenous people(s) or

rural communities (Gemmill and Bamidele–Izu 2002; Steffek and Ferreti 2009).<sup>58</sup> On the other hand, ENGOs are frequently better positioned than governments to provide policy advice or technical/scientific expertise. ENGOs invest a considerable amount of their resources and efforts to gathering and disseminating information, and have ‘built-up expertise in many of the scientific, economic, and social and technical disciplines relevant to sustainable development’(Yamin 2001: 157; see also Gough and Shackley 2001). Because they are often present on the ground, ENGOs are also in a good position to independently assess and report politically sensitive information such as states’ compliance records (Raustiala 1997; Gemmil and Bamidele–Izu 2002). Hence, governments increasingly rely on ENGOs’ input: if states – in particular those from developing countries that may lack the necessary resources for carrying out own research and analysis – are unable to collect this information themselves, they might approach ENGOs, which devote considerable resources to policy research or development and offer such information, evaluation, and expertise to the negotiating states (Princen 1994: 34ff; Raustiala 1997: 726f, 2001).

To recap, ENGOs provide negotiators then with ‘ideas from outside the normal bureaucratic channels’ (Gemmill and Bamidele–Izu 2002: see also Raustiala 1997: 727f), technical and scientific information, as well as neglected information from underrepresented population segments. We therefore claim that ENGOs –when actively present *in a large number* – can improve the negotiating capacity of governmental delegates and help them to negotiate on a more informed basis (Yamin 2001; Chasek 2001). The more ENGOs have access to a specific negotiation, the more information will be available to official state negotiators. Further, more ENGOs should also imply a more diverse range of ideas and inputs during bargaining processes – even despite the common interest to protect the environment.<sup>59</sup> Ultimately, if we subscribe to the

---

<sup>58</sup> Note, however, that ENGOs from rich, Western countries dominate and, consequently, there is a lack of ENGOs in the South (Beckfield 2003). However, a larger number of green organizations – regardless where these actually come from – still means that there is a broader range of expert information and advice, as well as the ability to signal more credibly that their activities align with preferences of all segments in the population – including individuals, people, and groups that are not well represented in policymaking at any level.

<sup>59</sup> The impartiality of ENGO information may arguably be questioned in some cases, but the ‘plurality of sources provides a check on exaggeration, obfuscation, and poor logic and data’ (Raustiala 1997: 727).



notion that ‘better information means better outcomes,’ a larger number of ENGOs that actively participates by providing more information should be positively related to stronger environmental commitments of states:

**Hypothesis 6.2:** The larger the numbers of ENGOs that actively participate in international environmental negotiations, the higher the commitment level of states afterwards.

#### *6.2.4 Does the Combination of Access and Number of ENGOs Imply Better Outcomes?*

Finally, it is plausible that the two factors – access and number of active ENGOs – are likely to interact. In other words, the complementary effects of these two variables imply that the impact of ENGO access on the prospects for higher environmental commitments of states should vary conditional on the number of ENGOs that actively participate. Therefore, ENGO access as a precondition for influence should contribute to strong environmental agreements even more positively when access is granted to a large(r) group of environmental interest groups. Conversely, the impact of ENGO access should decrease if it can rely on a (very) small group of ENGOs only. The 2009 summit in Copenhagen helps us illustrating this point. Although a record number of non–state actors registered for the conference, access was only limited to a fraction of the registered participants (see McGregor 2011). Therefore, only a few ENGOs had the opportunity to insert their viewpoints directly into the negotiations. Hence, we seek to test in our last hypothesis:

**Hypothesis 6.3:** The impact of the degree of ENGO access on states' environmental commitments is conditional on its interaction with the number of ENGOS involved: the more ENGOS actively participating have a higher degree of access in international environmental negotiations, the higher the commitment level of states afterwards.

## 6.3 Research Design

### 6.3.1 Data

For empirically testing our hypotheses, we use the International Regimes Database (IRD) (Breitmeier, Underdal, and Young 2011), since these data comprise all variables necessary for our theory – despite the IRD's focus on international regimes.<sup>60</sup> The IRD is structured along regimes, components within regimes, and particular problems nested within these components (Breitmeier et al. 1996; Breitmeier, Young, and Zürn 2006; Young and Zürn 2006). For example, the international whaling regime is divided into components according to two different time periods: from 1946–1982 and from 1982–1998. Two problems are coded for each of these components, i.e., the conservation of whale stocks and the development of the whaling industry. In sum, we obtain a total of 23 regimes in 1946–1998, which, in turn, have 88 regime components and 124 collective action problems. Table 6.1 gives an overview of the 23 regimes in our data.

---

<sup>60</sup> The data do not sufficiently reflect quality of ENGO participation as much as they do quantity, i.e., the data do not really explain the nuances of ENGO participation. Therefore, the data used for the analysis do have their flaws. However, we assess the quality of the data thoroughly in the appendix, where we do not find much evidence for substantial inconsistencies in the data. Furthermore, more accurate data on ENGO access and participation do not yet exist to the best of our knowledge.

**Table 6.1** Environmental Regimes in Data Set

---

Antarctic Regime (1959–1998)
Baltic Sea Regime (1974–1998)
Barents Sea Fisheries Regime (1975–1998)
Biodiversity Regime (1992–1998)
Climate Change Regime (1992–1998)
Convention on International Trade in Endangered Species (1973–1998)
Danube River Protection (1985–1998)
Desertification Regime (1994–1998)
Great Lakes Management Regime (1972–1998)
Hazardous Waste Regime (1989–1995)
IATTC Regime (1949–1998)
ICCAT Regime (1966–1998)
International Regulation of Whaling (1946–1998)
London Convention Regime (1972–1998)
Long–Range Transboundary Air Pollution (CLRTAP) (1979–1998)
North Sea Regime (1972–1998)
Oil Pollution Regime (1954–1998)
Protection of the Rhine Against Pollution (1976–1998)
Ramsar Regime on Wetlands (1971–1998)
Regime for Protection of the Black Sea (1992–1998)
South Pacific Fisheries Forum Agency Regime (1979–1998)
Stratospheric Ozone Regime (1985–1998)
Tropical Timber Trade Regime (1983–1998)

---

Source is Breitmeier, Underdal, and Young (2011)

Due to three reasons, we use a specific collective action problem of a regime as the unit of analysis. First, we avoid aggregating different – and sometimes contradictory – regime goals into one observation. The whaling regime is an obvious case for this problem. Second, this approach is the most accurate approximation to the consensus definition of regimes, i.e., agreeing on and implementing explicit principles, norms, rules, and decision–making procedures that define expected behavior in a specific problem field (Krasner 1983). Rules and decision–making procedures (and generally all our variables used for our analysis) vary over these collective action problems. Attempting to aggregate this information along components or entire regimes is then problematic and would potentially induce theoretical confusion with the existent regime literature. Finally, choosing collective action problems instead of components or aggregated

institutions increases the number of observable implications for our theoretical claims, thereby enhancing the generalizability of our findings.

The IRD's information was collected by 48 independent scholars in the field of environmental politics, varying from one to four coders for any particular variable.<sup>61</sup> Although this approach has many advantages, there might be problems with the reliability of the information due to the possibility of coders' cognitive bias and inconsistencies. Hence, these data may suffer from imprecise information or inconsistencies and an anonymous reviewer pointed out that the data do not necessarily reflect quality of ENGO participation, but quantity. The IRD's data team tried to address this problem by relying on scholars who are recognized for their expertise and by engaging in discussions with them (Breitmeier, Young, and Zürn 2006: 59). Breitmeier, Young, and Zürn (2006: 60) also emphasize that coders were supposed to answer only when they could respond with confidence. To control for any other remaining bias, we use the answers of all experts and then calculate the mean value for a single variable. If we had the information from one coder only, we used this information without any further adjustments. Finally, we calculated Cohen's  $\kappa$  scores in order to obtain an assessment of the inter-coder reliability (Cohen 1960). Those calculations did not indicate severe problems with the data, however.

### 6.3.2 *Dependent Variable and Methodology*

According to our theoretical argumentation, the dependent variable has to capture the degree of states' commitments to solve an environmental problem.<sup>62</sup> In this context, Downs et al. (1996) developed the concept of *Depth of Cooperation*, i.e., the extent to which an environmental treaty demands actual behavioral changes from its members, being measured by the density and

---

<sup>61</sup> For a comprehensive description on how the experts obtained the data, see Breitmeier et al. (1996).

<sup>62</sup> These commitment levels should reflect the policy positions of ENGOs, since we would not be able to claim an association or a relationship between ENGO access/number and stronger environmental commitments otherwise. An objective measurement may appear rather difficult in this context as there are generally numerous non-governmental organizations involved in international environmental negotiations, with individual – sometimes not necessarily overlapping – goals. However, since our analysis only examines the engagement of ENGOs, it is plausible to assume that states higher environmental commitments also mirror the interests of these organizations (Betsill and Corell 2001: 75).

specificity of a regime's primary rule system (Downs et al. 1996: 383). Thus, the depth of cooperation offers an objective measure for the actual level of states' environmental commitment. We use the IRD's REGIME\_SHALLOW variable that ranges from 1 (very shallow level of cooperation) to 5 (very deep level of cooperation). Table 6.2 shows the variation in *Depth of Cooperation*. Very shallow levels of cooperation are characterized by only a very limited number of rules and established procedures are rather weak, compared to the specificity of the rules considered necessary for managing an environmental issue in question. The Vienna convention is a regime of such a kind. 17.74% of our observations have a rather shallow level of cooperation. For example, although the original framework of the CLRTAP is characterized by a very shallow level of cooperation, states adopted their behavior according to the environmental changes and established a somewhat higher, i.e., shallow level for the succeeding first sulfur protocol. The largest category of observations, i.e., about 41% has a medium depth of cooperation. The treaty for the conservation of flora and fauna, seals, etc. in the Antarctic region is one regime belonging to this class. 25.81%, such as the whaling regime after 1982, of our observations demonstrate a rather deep level of cooperation. Finally, very deep levels of cooperation belong to regimes comprising of a very comprehensive set of rules or established procedures, which are relatively strong compared to the specificity of the rules necessary for addressing an environmental problem effectively (Breitmeier et al. 1996: 85). As the most prominent example, the CITES convention after 1989 belongs to this cluster. In sum, Table 6.2 highlights that we have a sufficient amount of variance for *depth of cooperation*, but less than 30% of the cases actually have a degree of commitment that goes beyond medium levels.

Due to the ordinal scale of our dependent variable, an ordered-probit setup seems appropriate. However, a shortcoming of using sub-cases of regimes as the unit of analysis is that collective action problems are likely to have significant elements in common with each other. For example, it is unlikely that the two collective action problems from the whaling regime are independent from each other – even if only due to common factors not explicitly controlled for. The most accurate solution for addressing this problem would be a fixed-effects approach. When

estimating a non-linear model, however, fixed-effects parameters lead to biased coefficients (Greene 2004). Therefore, we use a random-effects ordered probit model instead (Crouchley 1995) with standard errors clustered on the regime of each observation to further control for intra-group correlations.<sup>63</sup>

**Table 6.2** The *Depth of Cooperation*

	Frequency	Percent
Very Shallow	15	12.10
Shallow	22	17.74
Medium	51	41.13
Deep	32	25.81
Very Deep	4	3.23
Total	124	100.00

### 6.3.3 Explanatory Variables

For operationalizing ENGO access and the number ENGOs actively participating in international environmental negotiations, we employ two variables from the IRD. First, we take the IRD's NEGOTIATE\_NON\_STATE\_ROLE (Breitmeier et al. 1996: 57), which describes what kind of roles ENGOs played during the negotiations of an environmental regime.<sup>64</sup> We recoded the variable for obtaining an ordinal scale, where higher values represent a higher degree of ENGO access.<sup>65</sup> More specifically, a value of 0 stands for no ENGO activity or observer roles; 0.5 signifies that ENGOs exerted pressure either inside or outside the negotiations in some way; 1 pertains to ENGOs that were a member of a national delegation or a negotiation body; and 1.5 stands for cases where ENGOs pursued a dual strategy combining values 1 and 0.5 (Gulbrandsen and Andresen 2004; Betsill 2006).<sup>66</sup> Due to a regime's collective action problem as our unit of analysis and since there may be multiple ENGOs during the negotiations of these, we must

<sup>63</sup> Hausman tests demonstrate that the regular ordered probit estimator is less efficient than our approach.

<sup>64</sup> The original IRD item also includes non-governmental groups that do not pursue pro-environment goals. We identified those groups and dropped them from our data, however.

<sup>65</sup> The results reported below are virtually identical when recoding the different values of *ENGO Access* into binary variables and including these items instead of our ordinal scale.

<sup>66</sup> Consequently, this operationalization captures both insider and outsider strategies (Betsill 2006; Beyers 2004).

aggregate these data. We use a strongest–link specification (Hirshleifer 1983; 1985), i.e., the final *ENGO Access* item takes the value of the strongest activity of any ENGO involved during an environmental negotiation, as it seems plausible that the impact of ENGOs is driven by the strongest activity or ‘the best shot’ of any environmental interest group.

Second, using the IRD’s NONSTATE variable (Breitmeier et al. 1996: 57), we then counted the number of ENGOs that were present during the negotiations of a regime treaty. However, a simple count variable considering all ENGOs that were present during an environmental negotiation would overestimate the impact of this variable, since we would also incorporate those ENGOs that were present, but had no activity or only acted as observers, i.e., those ENGOs that are less likely to influence states’ commitment levels in the first place. Hence, we decided to address this by a two–fold strategy. First, we only considered those ENGOs that actively participated at least to some degree, i.e., ENGOs that obtained at least a value of 0.5 on the *ENGO Access* variable. Second, we also weigh our final *Number of ENGOs* item according to the actual degree of access (Laakso and Taagepera 1979):

$$\text{Number of ENGOs} = \frac{1}{\sum s_j^2}$$

where  $s_j$  is the share of the summed level of access for each ENGO  $j$  in a given environmental negotiation. A value of 1, consequently, stands for only one actively participating ENGO (see Lijphart 1999: 65ff), while higher values signify that more than one ENGO had at least some sort of potentially influential access to state negotiations. In order to illustrate this point and to make our calculations transparent, consider the following example. The IRD lists four ENGOs for the negotiations of the Antarctic Treaty between 1989 and 1998: the Antarctic and Southern Ocean Coalition (ASOC), Greenpeace, the International Association of Antarctica Tour Operators (IAATO), and the Scientific Committee on Antarctic Research (SCAR). While ASOC and Greenpeace both exerted pressure inside and/or outside the negotiations as well as had members in states’ official delegations, IAATO only exerted some pressure inside and/or outside the negotiations. The SCAR was only accredited an observer status. According to this, we

assigned the values of 1.5 to ASOC and Greenpeace, a value of 0.5 to IAATO, and a value of 0 to SCAR. Against this background, the summed level of access would be 3.5 here and the value of *Number of ENGOs* is 2.58.<sup>67</sup>

Finally, for testing our third hypothesis on the interaction between *ENGO Access* and *Number of ENGOs*, we multiply both items and include this new variable simultaneously in the models.<sup>68</sup>

### 6.3.4 Control Variables

Neglecting to control for other determinants of states' environmental commitment that are not specifically addressed in our theoretical discussion could induce biased results. Therefore, we consider four additional covariates. First, Mitchell (2006: 81) stresses the importance of uncertainty on an environmental problem in question. Uncertainty increases the reluctance to adapt strong environmental commitments. In turn, higher levels of certainty and transparency make states more likely to rely on other actors' compliance, which should increase the likelihood of stronger commitments (see Keohane 1984; Hawkins et al. 2006). Miles et al. (2002: 37) argue the same when combining uncertainty with problem malignancy to obtain a measure for a regime's underlying problem structure. Finally, including a variable on uncertainty also decreases the likelihood of finding spurious relations between our core variables of interest and *Depth of Cooperation*, as we emphasized ENGOs' information provision, in particular with regard to our second hypothesis. Further, we also address a selection problem here, since uncertainty about an environmental problem is likely to be associated with states' decisions to grant ENGO access in the first place. We use the IRD's PROBLEM\_UNDERSTAND (Breitmeier et al. 1996: 32).

<sup>67</sup> More precisely,  $2.58 = \frac{1}{\left(\frac{1.5}{3.5}\right)^2 + \left(\frac{1.5}{3.5}\right)^2 + \left(\frac{0.5}{3.5}\right)^2}$ .

<sup>68</sup> One might object to our approach for testing the third hypothesis that including an interaction term is unnecessary as we already use the level of ENGO access as a weight to obtain estimates for *Number of ENGOs*. It can be easily shown, however, that we do have to incorporate the multiplicative term for our third hypothesis due to the calculation (see Laakso and Taagepera 1979; Lijphart 1999: 65ff) of *Number of ENGOs*. More specifically, a case with three ENGOs that all have an access level of 0.5 would display the exact same value on *Number of ENGOs* as a case with three ENGOs as well that all receive a value of 1.5 on the access scale. Thus, merely employing *Number of ENGOs* for the chapter's third hypothesis (and, hence, a simple count item for the second hypothesis) is insufficient.



Second, Barry (1978) emphasizes the influence of hegemons for environmental commitments.<sup>69</sup> These actors organize an international regime, they ensure that other members pursue a common interest, and they allow states not favoring the hegemon's interest to agree on policies through the provision of side-payments (Frohlich and Oppenheimer 1970; Grundig and Ward 2008). We include POWER\_SETTING\_SYMMETRY, with the highest value standing for an issue specific hegemon (Russett and Sullivan 1971; Gilpin 2001).

Third, the larger the number of states in an environmental negotiation, the higher the costs of organizing them, and the less likely that they are able to provide an environmental good optimally (Olson 1965; Chamberlain 1974). Thus, by using the IRD's NUMBER\_CAUSERS variable (Breitmeier et al. 1996: 14), we consider the number of actors that are potentially relevant for an environmental problem. Further, relying on GOOD\_TYPE (Breitmeier et al. 1996: 24), we generated a dummy variable for environmental public goods. We refer to environmental public goods when individual states within a given group cannot be excluded from good consumption and the amount consumed by one country does not decrease the available amount for others. We also multiply the *size* item with the latter variable in order to capture existent interaction effects.

Finally and as indicated above, our study might suffer from selection bias. For example, governments that are more favorable toward the environment – and, thus, more interested in deep cooperation – may also be more likely to grant ENGOs access to a higher extent.<sup>70</sup> In other words, it is likely that ENGO participation is strategically selected and, hence, not random. To address this, Regan and Stam (2000) highlight in a somewhat different context that one has to control for the primary concerns that are likely to induce potential selection bias in the first place and the timing/duration. With regard to the former, *Uncertainty* and *Hegemon* are controls that influence the malignancy of a regime (Miles et al. 2002: 37), i.e., factors that may be associated with the decision to grant ENGO access in the first place. Second and in order to address the timing/duration suggestion, an approach for recovering some random variation in the treatment

<sup>69</sup> See also Miles et al. (2002: 37) who cluster this concept under a regime's problem structure.

<sup>70</sup> Similarly, states often deny the participation of ENGOs as it could constrain their sovereignty and might threaten their dominant position in negotiations – particularly when bargains are important to them (Clark et al. 1998: 10; see also Clark 1995; Stasavage 2004).

variable, but is otherwise arguably orthogonal to the outcome (i.e., uncorrelated to the error in the outcome), might seem necessary. In this context, we incorporate *Duration* that measures in an ordinal fashion if a regime's collective action problem as our unit of analysis can draw upon pre-existing regime components and, thus, how long a specific regime collective action problem/component does exist.<sup>71</sup>

Table 6.3 provides an overview of the variables.

**Table 6.3** Descriptive Statistics

	Obs	Mean	SD	Min	Max
Depth of Cooperation	124	2.903	1.023	1	5
ENGO Access	116	0.884	0.508	0	1.5
Number of ENGOS	105	2.049	1.257	0	5
ENGO Access * Number of ENGOS	105	1.796	1.375	0	6.878
Size	119	2.454	1.247	1	6
Public Good	124	0.427	0.497	0	1
Size * Public Good	119	0.941	1.199	0	6
Uncertainty	124	2.185	0.842	1	4
Hegemon	120	2.958	0.749	1	5
Duration	124	0.907	0.742	0	3

## 6.4 Empirical Findings

Table 6.4 reports our results from the random-effects ordered probit regressions. We run four models. Model 6.1 includes the two core variables only. Model 6.2 then introduces the interaction term, while Model 6.3 exclusively focuses on the control variables. Finally, Model 6.4 incorporates all explanatory variables simultaneously.

<sup>71</sup> For example, the first collective action problem of the first component of the whaling regime (1946–1982) cannot draw upon pre-existing regime structures and, thus, receives the value of 0. This does not apply to the same collective action problem of the second component (1982–1998), however, which then receives a value of 1. While we will discuss the selection issue in the conclusion again, note that the appendix also includes a robustness check using three-stage least-squares regression models that test for reversed causality (i.e., deep environmental commitments affect ENGO participation) as induced by the selection problem here.

**Table 6.4** The Impact of ENGOs on Environmental Commitment Levels

	Model 6.1 (Base)	Model 6.2 (Interaction)	Model 6.3 (Controls)	Model 6.4 (Full)
ENGO Access	1.362 (0.314)***	2.099 (0.533)***		1.777 (0.557)***
Number of ENGOs	0.544 (0.112)***	0.818 (0.203)***		1.111 (0.233)***
ENGO Access * Number of ENGOs		−0.399 (0.237)*		−0.744 (0.271)***
Size			−0.223 (0.167)	−0.123 (0.195)
Public Good			0.352 (0.714)	1.096 (0.764)
Size * Public Good			0.056 (0.300)	−0.142 (0.305)
Uncertainty			−0.358 (0.192)*	−0.564 (0.207)***
Hegemon			0.367 (0.199)*	0.360 (0.212)*
Duration			1.280 (0.237)***	1.115 (0.237)***
Obs	105	105	96	96
Log Likelihood	−124.615	−123.118	−110.132	−96.658
LR $\chi^2$	30.89***	33.88***	41.44*	68.39***
$\rho$	0.770***	0.773***	0.803***	0.886***
Pseudo- $R^2$	0.11	0.12	0.16	0.26

Estimates are based on random-effects ordered probit models. Table entries are marginal effects. Standard errors clustered on regime in parentheses. Cut-points not reported

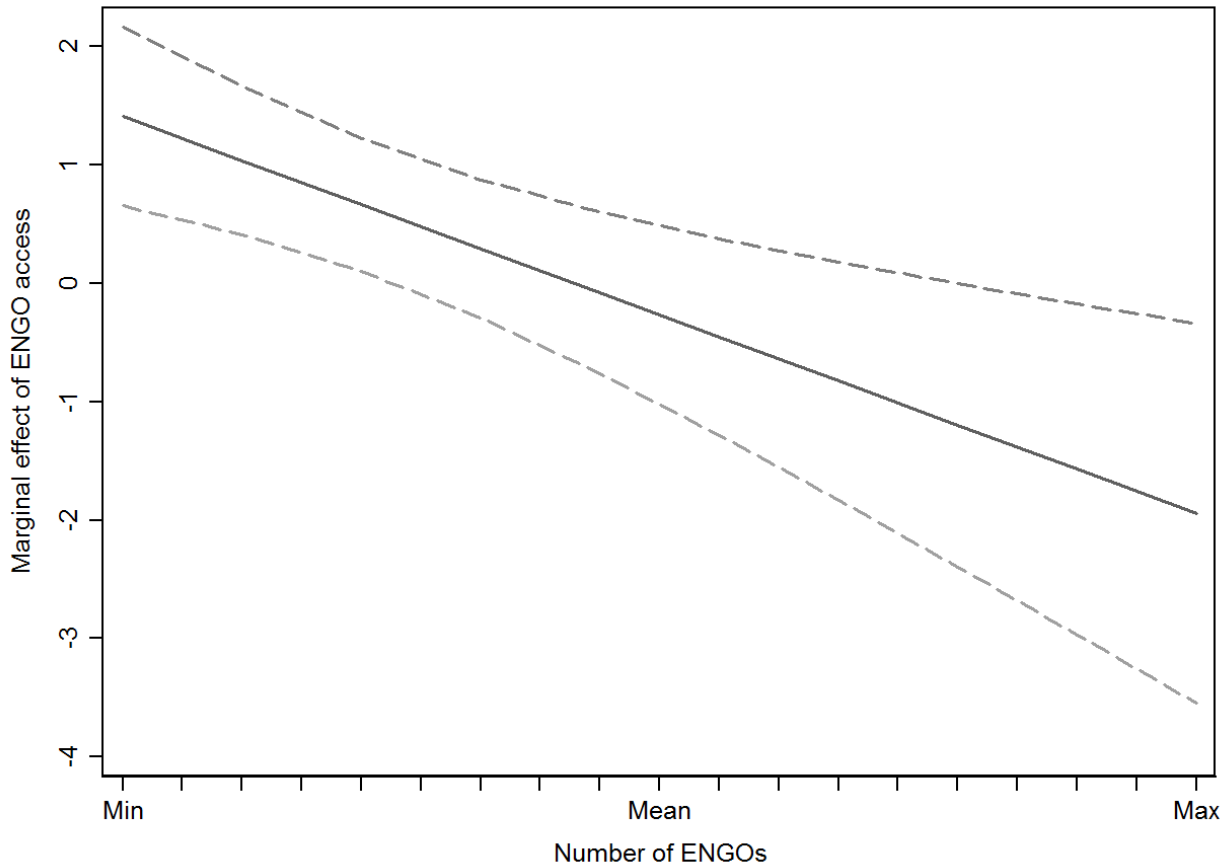
\* significant at 0.1 level, \*\* at 0.05 level, \*\*\* at 0.01 level (two-tailed)

As Table 6.4 demonstrates, we obtain a rather good model fit. McFadden's  $R^2$  ranges in the interval [0.11; 0.26], showing that the control covariates as suggested by the literature contribute toward explaining variance in regime members' commitment levels. Note, however, that this is essentially driven by *Uncertainty*, *Hegemon*, and *Duration*. As expected, the impact of *Uncertainty* is negative and significant. Adding or dropping variables from the model does essentially not alter this finding. Therefore, the higher the uncertainty of actors about an environmental problem in question and about the consequences of their actions, the more reluctant are states to agree on strong environmental commitments. Furthermore, *Hegemon* has the predicted sign and reaches conventional levels of significance. Hence, although Keohane (1984) argues against hegemons as (necessary) conditions for effective regimes, they still may be

able to lead to more effective outcomes through organizing an environmental regime, ensuring that other members pursue a common interest, and through the provision of side-payments. The other control covariates, i.e., *Size*, *Public Good*, and their multiplicative term, do not seem to affect countries' level of environmental commitment substantially or their effects depend on model specifications.

Coming to our core variables of interest, we first start discussing the model without the interaction effect. Both items, *ENGO Access* and *Number of ENGOs*, have the expected positive sign and are highly significant. In more detail, the higher the maximum degree of access of any ENGO during the negotiations of an environmental regime, the higher the commitment level of states afterwards. If at least one ENGO was able to affect negotiations via its official membership in a state delegation and/or benefited from significant possibilities to exert pressure otherwise, it seems that states adopted the pro-environmental policies of ENGOs at least to some extent and were generally more willing to agree on stronger levels of environmental commitment. Second, it also appears that the more actively participating ENGOs were present during negotiations, the higher the *Depth of Cooperation*. More ENGOs can transmit more information and these civil society actors are then more likely to push governments toward higher environmental commitments. Put differently, a larger number of 'potentially influential' ENGOs is more likely to create leverage over states in bargaining processes. Ultimately, these states are significantly more likely to agree on higher commitment levels.

Models 6.2 and 6.4 then incorporate the interaction term between *ENGO Access* and *Number of ENGOs*. In trying to understand the interaction effect, note that we cannot interpret it directly from Table 6.4 (Brambor, Clark, and Golder 2006). Instead, we follow Braumoeller (2004: 815ff) for calculating the marginal effect for *ENGO Access* conditional on *Number of ENGOs*. Figure 6.1 depicts our findings.



**Fig. 6.1** Conditional Marginal Effect of *ENGO Access* on *Depth of Cooperation*

*Note:* Dashed lines show 90% confidence interval

Until about two potentially effective ENGOs in environmental negotiations, we obtain a positive and significant marginal effect of *ENGO Access*. This basically mirrors our findings from the model without the interaction term. Figure 6.1, however, reveals two interesting differences. First, the marginal effect decreases with the number ENGOs actively participating. In other words, although the general impact on states' environmental commitment levels is still positive for a substantial range of values on *Number of ENGOs*, the size of this influence decreases with more ENGOs that have a potentially effective access to the negotiations. Second, if more than three ENGOs were engaged, the impact of *ENGO Access* becomes even negative although it is statistically insignificant until about five ENGOs. This implies that the level of ENGO access in international environmental negotiations does matter – but it largely depends on how many ENGOs are actually participating in an active fashion. Although we lack a coherent explanation for this finding at this stage and seek to address it in future research, we believe that

one explanation might seem plausible. ENGOs in environmental negotiations essentially seek to pursue a common interest, which can reflect a collective action problem in the sense that larger groups of ENGOs are more likely to face unanticipated problems of coordination, thus decreasing their effectiveness: the creation of leverage over policymakers in order to promote ENGO interests becomes more difficult and more costly to organize as the number of ENGO groups increases (Bernauer et al. 2013; see also Buchanan and Tullock 1962; Olson 1965: 46ff; Chamberlain 1974). In turn, the organizational costs increase with the number of ENGO groups primarily in the following way: the larger a group of ENGOs, the more likely it is that the ENGO network is characterized by greater heterogeneity of interests (Snidal 1994). In the words of one ENGO member, for example, ‘when so many different [ENGO] actors are drawn into the process, there is a danger that our demands may be blunted [...]. Consequently, we may end up with a lowest common denominator, which is no better than the kind of compromises diplomats engage in’ (Bernstein et al. 1992). Hence, if many ENGOs seek to influence state actors directly in bargaining processes, this increases the likelihood that they actually face a collective action problem of participation and exerting pressure. The actual degree of ENGO access does no longer play a crucial role then, but instead ENGOs constrain and block themselves in their efforts.

## **6.5 Conclusion**

Our motivation was to increase the understanding of the impact of ENGOs in international environmental negotiations. So far, the theoretical work has been inconclusive on this issue and we largely lacked comparative as well as quantitative approaches across a broad set of environmental negotiations.

Although we do not contend that our work gives the finite answer to this research question, we hope that our theory and empirical evaluation of it shed some light on existing controversies.<sup>72</sup> More specifically, we found support for the hypothesis that the higher the degree of ENGO access in international environmental negotiations, the higher the commitment level of states, i.e., their depth of cooperation, afterwards. ENGOS that have access are generally better able to create leverage over official state negotiators, which then increases the chances that states are more likely to commit to stronger environmental agreements. Second, the more ENGOS actively engaged in international environmental negotiations, the higher the commitment level of states in the end. More ENGOS that actively participate convey more and potentially better information. This, in turn, translates into stronger environmental agreements that states commit to. Finally, we found some evidence for an interaction effect between *ENGO Access* and the number of ENGOS actively participating. As it seems, the impact of ENGOS' degree of access on states' commitment levels stays positive for small groups of those non-governmental actors, but decreases and even becomes negative with larger groups. This goes against our theoretical expectations and the conventional wisdom. As an ad-hoc explanation, we pointed to the problems of collective action in this regard.

The contribution of this chapter is primarily at an empirical level, but although our research was able to provide some answers on important questions in the context of the governmental-ENGO nexus, other important issues remain understudied and many avenues for further research do exist. First, we treated ENGOS largely as a *black box*, not addressing specific characteristics of these actors and only examined their degree of access and their number of participants. However, ENGOS are highly diverse; they might comprise local, national, regional, or international organizations, all with potentially different foci and objectives (Gemmell and Bamidele-Izu 2002; Raustiala 1997: 721). Further, the effectiveness of ENGOS is essentially driven by factors such as funding, the overlap with the interests of participating governments, the level of expertise,

---

<sup>72</sup> Note, however, that we do not make any claims on causality, although we find an association for our core variables of interest. Put differently, to say that *ENGO Access*, *Number of ENGOS*, and their interaction are statistically associated with *Depth of Cooperation* is different from the claim that the former cause the latter.

persistent lobbying, issue framing, or the successful advocacy and mobilization of environmental issues at both the national and the international level (Albin 1999: 382). Hence, it seems an effort worth making to disaggregate ENGO characteristics and, in turn, examine their impact on various factors more thoroughly. This calls for future data collection projects.

Second, although ENGOs have the possibility to exert influence over states, they often become ‘hostages’ and integrated when they participate in national delegations. Also, some governments directly support ENGOs, which may compromise an ENGO’s independence (e.g., Mawlawi 1993). Ultimately, this allows states to exert influence as well (Farrington and Bebbington 1993). For example, Skodvin and Andresen (2008) show in the case of the whaling regime that the US administration supported – but also exerted influence over – the environmental and animal rights movement. Which impact might this influence have? Do ENGO strategies change accordingly? Unpacking these mechanisms in detail is beyond the scope of our chapter but future studies might want to address and control for alliances between states and ENGOs.

Finally, although our research demonstrates that a higher degree of access is important for ENGOs to exert influence, we did not control for why ENGOs might obtain access, e.g., via delegation membership in the first place. As emphasized above, ENGOs are not randomly selected or chosen into state delegations. States decide and have to agree on this. But what are the incentives for states here if it is frequently argued that ENGOs circumscribe states’ legitimacy, sovereignty, and decision-making power? Future research along those issues might be fruitful for further promoting our understanding of ENGOs and their interaction with governments in global environmental governance. In fact, chapter 8 tries to address this point.



## 7 National Climate Policies in International Comparison

### 7.1 Introduction<sup>73</sup>

Since the early 1990s, the international community has made some, albeit far from sufficient progress towards reducing greenhouse gas emissions and their impact on humankind and ecosystems. Meanwhile it has become increasingly apparent that policies to that end differ strongly across countries and over time, both in terms of form and *de facto* contribution to the global public good of ‘stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system’ (UNFCCC Art. 2).

A large body of literature describes and assesses the policy efforts of individual countries or groups of countries (e.g., Reiche 2010; Victor 2006; Yamin and Depledge 2004). Although studies on individual countries and their policies are very useful and provide important insights, broader international comparisons focusing on a large set of countries over a relatively long period of time might allow for even more systematic and far-reaching conclusions (e.g., Bättig and Bernauer 2009; Bättig et al. 2008; Böhmelt 2012; Burck and Bals 2011). More specifically, it is important to know – both from the perspective of policy-makers and scholars – which countries, in descriptive terms, are ‘leading the effort’ and which ones are ‘lagging behind.’ In analytical terms, comparing a large number of states and their policies over time allows for more generalizable inferences with respect to the factors that are conducive to more ambitious mitigation efforts.

---

<sup>73</sup> The following chapter is based upon an article that I co-authored with Thomas Bernauer. Therefore, I use the first-person plural throughout this chapter. At the time of submitting the habilitation, this article has been accepted for publication at *Environmental Science & Policy*.

One major obstacle to large-scale comparison of states' climate policies is insufficient data. Most of the existing analytical work simply uses greenhouse gas emission levels and/or rates of change to compare countries. This approach does not fully capture a country's overall climate policy performance; focusing on emissions does not automatically tell us how strict or ambitious the climate policy of a given country is, since emissions are also affected by factors other than policy (e.g., economic developments or weather). Moreover, some scholars have measured climate policy performance by looking at how fast countries ratified the UNFCCC and/or the Kyoto Protocol (e.g., Fredriksson and Gaston 2000; Neumayer 2002a; 2002b; Bernauer et al. 2010). This approach ignores the emissions component and, thus, it cannot capture the overall climate policy efforts of a country.

Thus far, we are aware of only two datasets that offer information both on emissions *and* on policy efforts for a large number of countries: the Climate Change Performance Index (CCPI) by the NGO and think-tank Germanwatch (Burck and Bals 2011), and the Cooperation Index (CI) by Bättig et al. (2008). As we will outline in greater depth below, the CCPI is based on data for emission trends, emission levels, and climate policy. The CI has a cross-sectional format, is available for 198 countries, and is based on aggregated data for the time period 1990–2005.

We have developed a new dataset that adds to these existing efforts. It builds on the measurement concept of the CI. Our *Climate Change Cooperation Index (C3–I)* addresses countries' overall climate policy performance as well as performance in terms of political behavior (output) and emissions (outcome). It covers up to 172 countries for the time period 1996–2008. The C3–I thus allows for systematic global comparison of countries' climate policy performance. The chapter also compares the C3–I with its most relevant alternative, the CCPI.

We proceed as follows. The next sections describe the main conceptual differences between the CCPI, the CI, and the C3–I. We then compare the countries and years for which information is available in the CCPI and C3–I. To illustrate how one or the other index can affect the findings of empirical research, we also discuss the results of a simple analysis on the effect of democracy

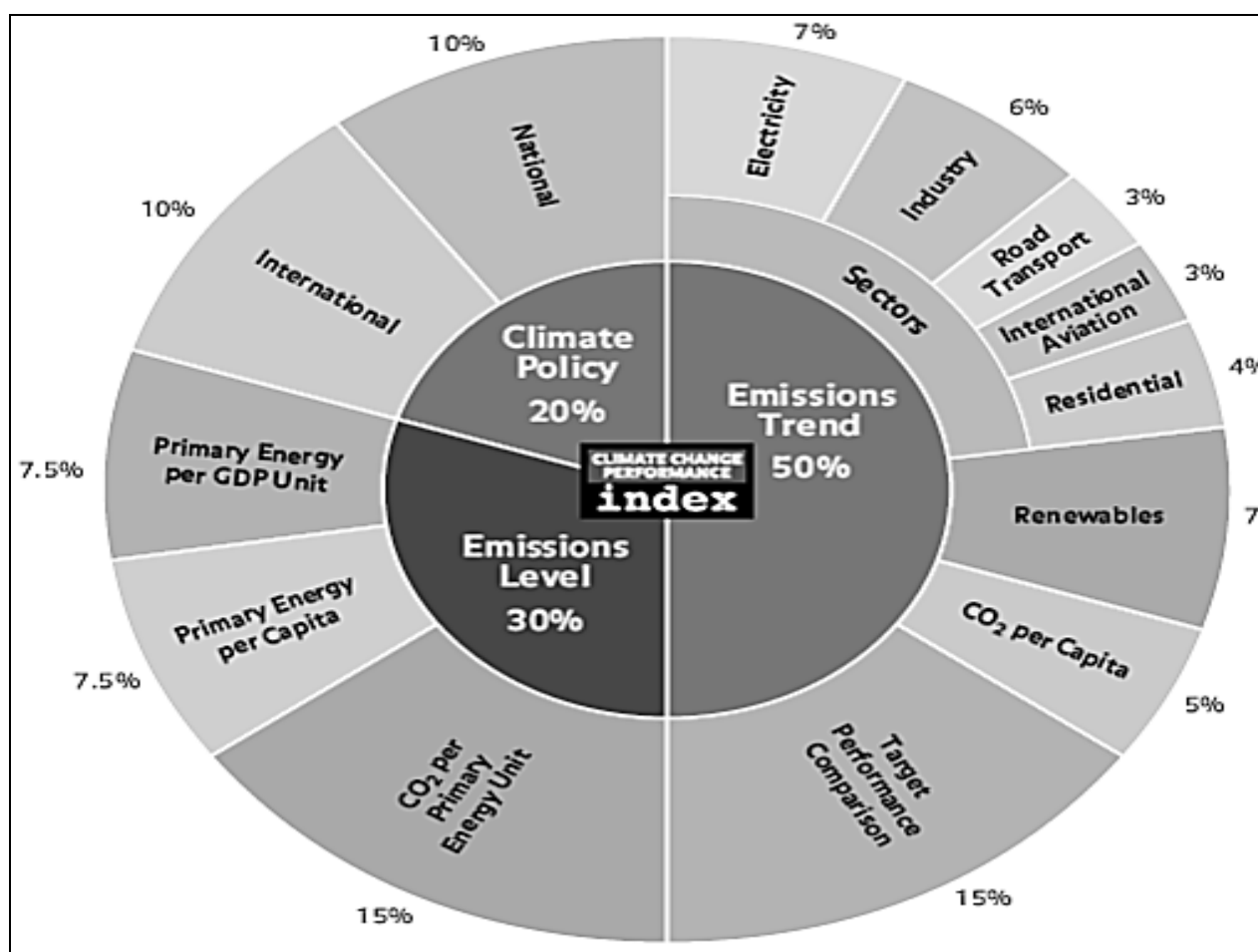
on countries' climate policy performance. We end by highlighting the differing advantages and disadvantages of the two indices.

## **7.2 Conceptual Differences between the CCPI and the CI**

The CCPI offers times–series cross–sectional data for up to 58 countries in the time period 2005–2011, with country coverage increasing over time. For example, the first CCPI covering the year 2005 offers data for 53 countries; the subsequent index for 2006 already covers 56 countries. The latest version of the CCPI offers data for 58 countries ‘that together are responsible for more than 90% of annual worldwide carbon dioxide emissions’ (Burck and Bals 2011: 4). In total, this index relies on 13 indicators, 11 of which measure emission levels and trends, and two of which assess national and international climate policies (Burck and Bals 2011). These indicators are then aggregated into the overall CCPI. The weights given to the three categories of indicators in the aggregation process are 50%, 30%, and 20%, respectively. These weights are meant to avoid overly generous treatment of countries that make (substantial) improvements but starting from a poor performance level (Burck and Bals 2011: 5). Figure 7.1 illustrates the composition of the CCPI. While the emission level and trend indicators used for the CCPI are taken from third–party sources (primarily the International Energy Agency), the policy components of the CCPI are based on expert assessments solicited by Germanwatch. The overall index places countries within the interval [0; 100], where higher values indicate more ‘climate friendly’ behavior. As Burck and Bals (2011: 6) note, any individual score ‘indicates climate performance relative to that of other countries.’

Like the CCPI, the original Cooperation Index (CI) (Bättig et al. 2008: 480ff) is composed of indicators for emissions and for policy behavior. It uses aggregated average data for 1990–2005 and differs conceptually from the CCPI in important ways. On the policy side, it relies on rather

easily and objectively observable phenomena, rather than expert assessments. These policy phenomena are summarized in Table 7.1. Higher values on each of these indicators indicate more cooperative political behavior in terms of contributing to the global environmental public good. Already note here that the policy component of the C3-I presented below differs from the CI as discussed here. Bättig et al. (2008) categorize membership in the UNFCCC and the Kyoto Protocol as ‘commitment to common goals’ and all other indicators as ‘implementation of measures.’ We will treat two of the four ‘implementation of measures’ components of the CI as policy indicators (reporting and financial contributions under the UNFCCC).



**Fig. 7.1** Components of the CCPI

*Note:* Source is Burck and Bals (2011: 5)

On the emissions side, the CI compares emission levels and trends against an emissions trajectory, i.e., a fitted environmental Kuznets curve that serves as a benchmark. The emissions

part of the CI uses two components: 1990 levels of CO<sub>2</sub> emissions per capita in relation to GDP per capita; and the trend of CO<sub>2</sub> emissions per capita in relation to GDP per capita between 1990 and 2002. The rationale is that per capita CO<sub>2</sub> emissions should be allowed to develop differently depending on the economic situation of a country. As Bättig et al. (2008: 480ff) emphasize, '[a] developing country should have the possibility to increase its per capita emissions during economic growth. In contrast, a developed country should have the responsibility to invest in cleaner, more efficient technology and renewable energies, and thus stabilize and reduce its per capita emissions. To assess countries in this sense, per capita CO<sub>2</sub> emission levels and trends were evaluated with respect to an environmental Kuznets curve, which describes the relationship between economic development and emissions, and is assumed to first increase and then decrease as a function of income.' Relating emission trends and levels to income offers an indication of how well countries are coping with the challenge of growing economically without excessively damaging the natural environment (Mendelsohn et al. 2006; Schelling 1992). Higher values on the emissions component of the CI indicate more cooperative behavior. Burck and Bals (2011: 6) note that the CCPI 'ensures that the current status of economic development within each country is taken into account.' It remains unclear, however, how exactly this is achieved with the current conceptualization of the CCPI, given that the latter combines a rather large number of different types of emission indicators.

**Table 7.1** Policy Components of the CI (C3–I)

- 
- |     |  |
|-----|--|
| (1) | Two equally weighted indicators capturing whether a country ratified the UNFCCC (yes/no) and how fast it did so (declining scale from 1992 on).  |
| (2) | Two equally weighted indicators capturing whether a country ratified the Kyoto Protocol (yes/no) and how fast it did so (declining scale from 1998 on).  |
| (3) | Two equally weighted indicators capturing whether a country submitted the latest national climate report (yes/no) and whether it did so in time (declining scale until a delay of 6 month (AI countries) or three years (non-AI countries)). |
| (4) | One indicator measuring how often a country made its financial contributions to the UNFCCC secretariat on time between 1996 and 2005 (linear scale according to the number of contributions)   |
-

The aggregation of policy and emissions components into the overall index differs as well. The CI combines its components as follows: the four policy components are weighed equally on grounds that there is no *a priori* reason why one or any other component should be more important (Bättig et al. 2008: 486). The emissions component is multiplied by a factor of two, however, before being added to the four policy-related scores. Bättig et al. (2008: 483) argue that the emission component is ‘the most important of all as it requires larger efforts to change or implement a climate policy than to write a report, pay financial contributions, or ratify an agreement.’ Climate policy, thus, receives a much greater weight in the CI than in the CCPI, relative to emissions-related performance (2:1 in the CI vs. 1:4 in the CCPI). The scale for the aggregate CI ranges from 0 (least cooperative) to 6 (most cooperative) and is available for 198 countries.

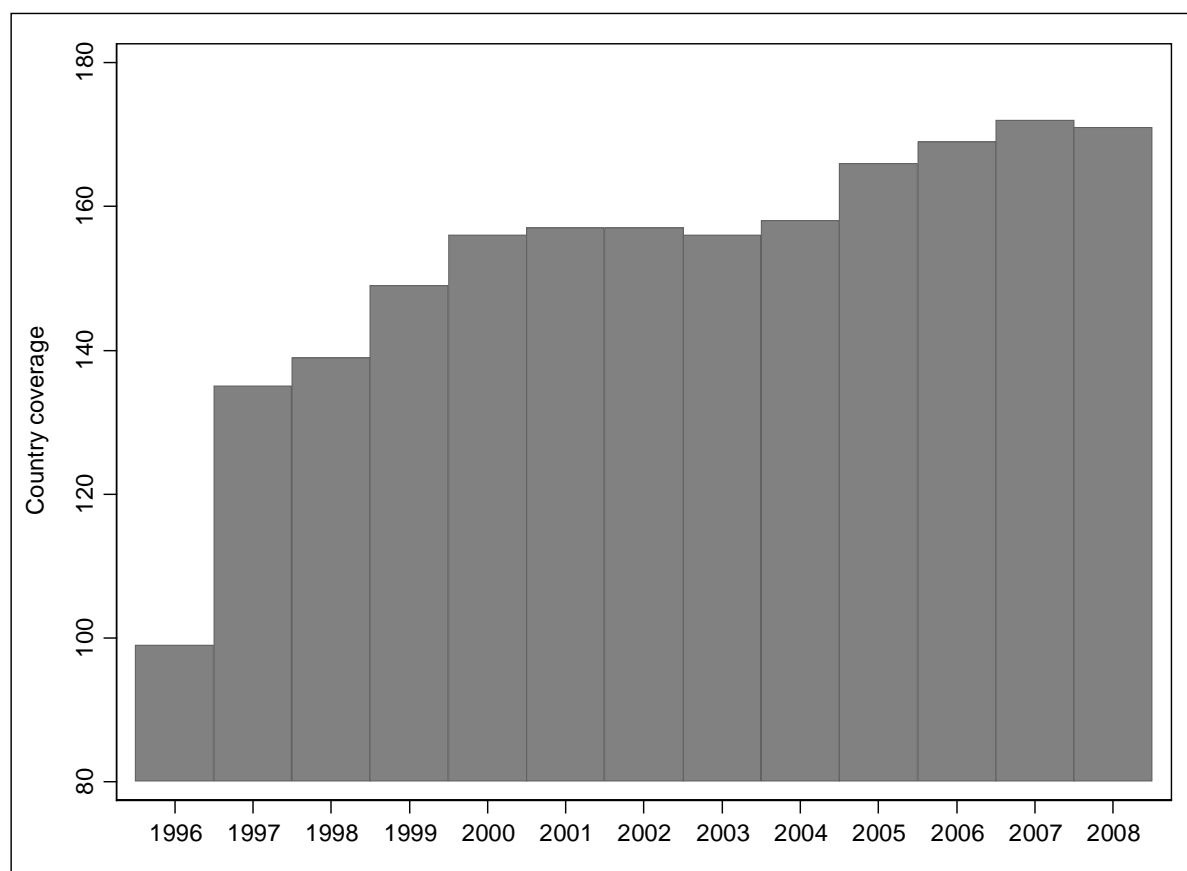
### **7.3 The Climate Change Cooperation Index (C3-I)**

We rely on the CI rather than the CCPI as a foundation for creating the new C3-I. This choice is due to several reasons. First, and as noted above, the main disadvantage of the CI is its cross-sectional nature. Climate change policies, as well as emissions, can and do change quite dramatically over time, however. Measuring such changes is important both from an academic and policy perspective. The policy component of the CCPI relies on expert assessments, which cannot be extended backward in time in a reliable manner (the CCPI starts in 2005, long after global climate policy started in earnest). Hence, backward extension or replication of the CCPI is excluded *ex-ante*, while this is possible for the CI.

Second, and related to the first point, we believe that the policy measurement concept of the CI, while arguably being narrower than that of the CCPI, rests on quite easily and objectively observable and thus transparent characteristics. Expert assessments form an important part of

many international data projects in the social sciences (e.g., democracy scores; see Marshall and Jaggers 2004). However, factors like ratification behavior, financial contributions, and countries' reporting behavior under the UNFCCC are, to a greater extent, relative to expert assessments, publicly observable, easy to detect, and comparable. That is, transparency and reliability of measurement are likely to be higher in the case of the CI, as compared to the CCPI.

Third, the CCPI uses a rather large number of sub-categories for its emission level and trend components, with different weights assigned to each component when aggregating them into the overall index. While each of these weights may well be justified, this approach introduces great complexity, much room for contestation, and, perhaps most importantly, increases the noise in the data. We prefer the parsimonious approach of the CI, which relates overall national emissions to economic output.



**Fig. 7.2** C3–I Country Coverage, 1996–2008

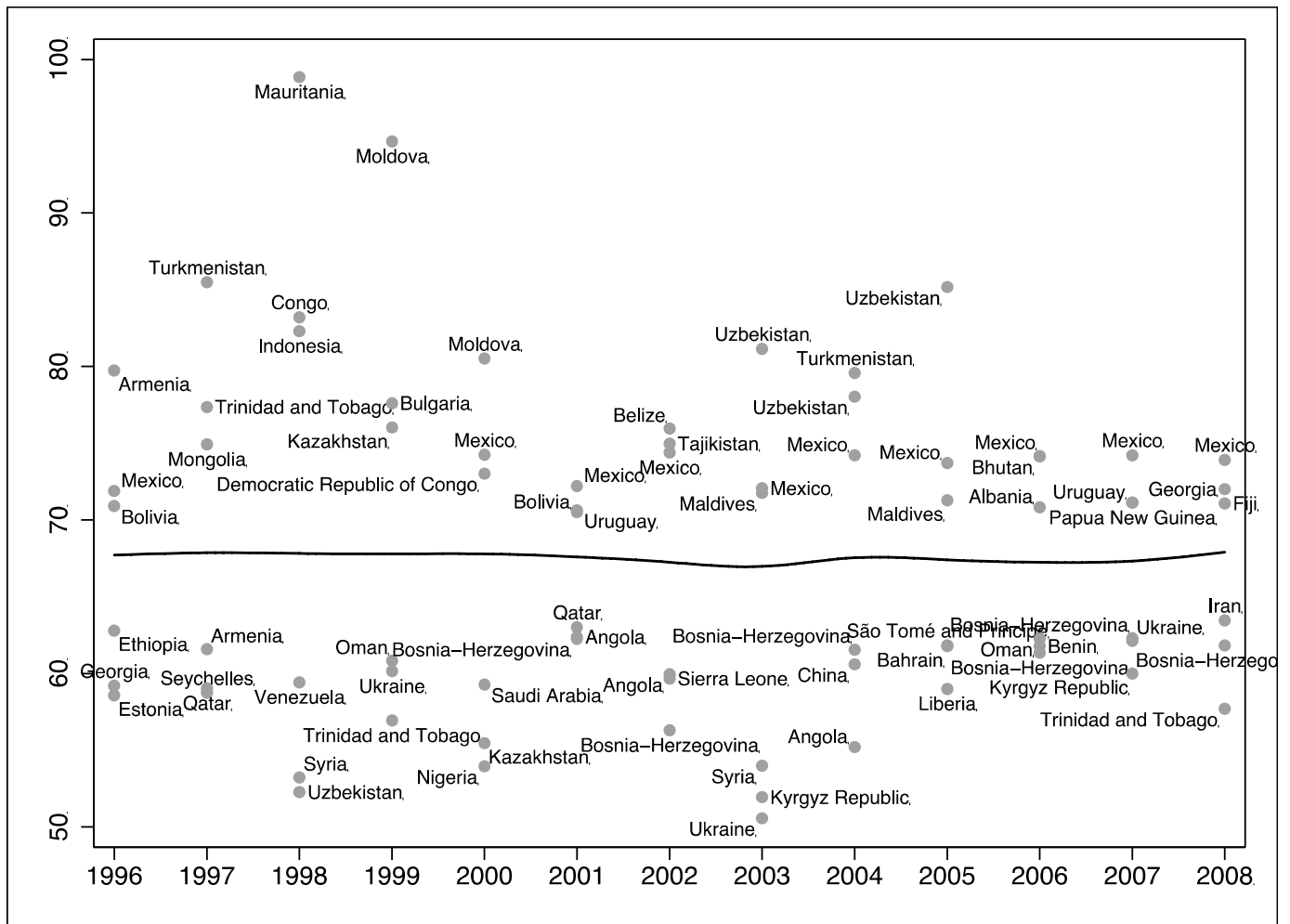
Nonetheless, we deviate from the original CI concept in one important aspect, namely its aggregation (see Böhmelt 2012). Whereas, in our view, the CCPI leans too much toward one extreme in weighing climate policy performance by (only) 20% in the overall index, the CI leans towards the other extreme in weighing climate policy by a factor of 2:1, relative to the emissions component. Consequently, we employ the exact same coding rules that were used for the six individual components of the CI (Bättig et al. 2008: 480ff) for our components of the C3–I, albeit in a times–series cross–section format. That is, for our purposes, the CI coding rules were used for every country–year separately. This ensures that our components and, as a result, the C3–I varies over time. We then aggregate the first four components into a ‘climate policy index,’ whereas the emission level and emission trend components are combined into an ‘emissions index’ (see also Bättig and Bernauer 2009; Böhmelt 2012). We also deviate slightly from the CI’s original emissions component here. Due to its cross–sectional nature, the original CI was weighed by a fitted environmental Kuznets curve for 13 countries of the EU. Since the C3–I follows a panel data format, this less flexible approach is no longer necessary and we use a ratio that weighs emission levels and emission trends by the corresponding GDP per capita (i.e., income) level.

The policy and emissions components are then aggregated with equal weight to the overall C3–I. This means that we do not prioritize climate policy behavior over emissions behavior. To facilitate comparison with the CCPI, we re–scaled the C3–I to the interval [0; 100], where higher values indicate more cooperative climate change behavior. The resulting panel data set covers up to 172 countries for the time period 1996–2008. Its mean value is 67.28. Note that the C3–I is available up to 2008 only, whereas the CCPI is available up to 2011. The reason is that we lack reliable emissions data for the most recent years. However, the climate policy part of the C3–I is available until the year 2010. Figure 7.2 visualizes the distribution of the C3–I’s country coverage by year. Starting with 99 countries in 1996 due to data constraints, we reach the maximum of 172 countries in 2007. The final year covered by our data (2008) offers information



for 171 states. Note that even with its minimum of 99 countries in the first year of observation, the C3–I covers many more countries and more years than the CCPI.

Figure 7.3 demonstrates that the yearly average level of the C3–I as a whole is fairly stable and quite well above the ‘theoretical mean’ of 50 over time. It shows the median band of our index and also identifies the three best and worst performing countries in each year based on the yearly C3–I score. Visual inspection of best and worst performing countries in Figure 7.3 suggests that poor performers include the ‘usual suspects,’ whereas some of the best performers may appear more surprising (Turkmenistan, Moldova, etc.).



**Fig. 7.3** C3–I Median Band with Three Best and Worst Performing Countries, 1996–2008

*Note:* Solid line shows median band

## 7.4 Empirical Comparison of the CCPI and the C3-I

### 7.4.1 Descriptive Comparison

As outlined above, the C3-I offers times-series cross-section data for up to 172 countries in 13 years (1996–2008), whereas the CCPI offers times-series cross-section data for up to 58 countries between 2005 and 2011. Any systematic empirical comparison of the two indices must, therefore, remain limited to four years and 55 countries (52 in 2005) for which data is available in both datasets (N=217; time period: 2005–2008).

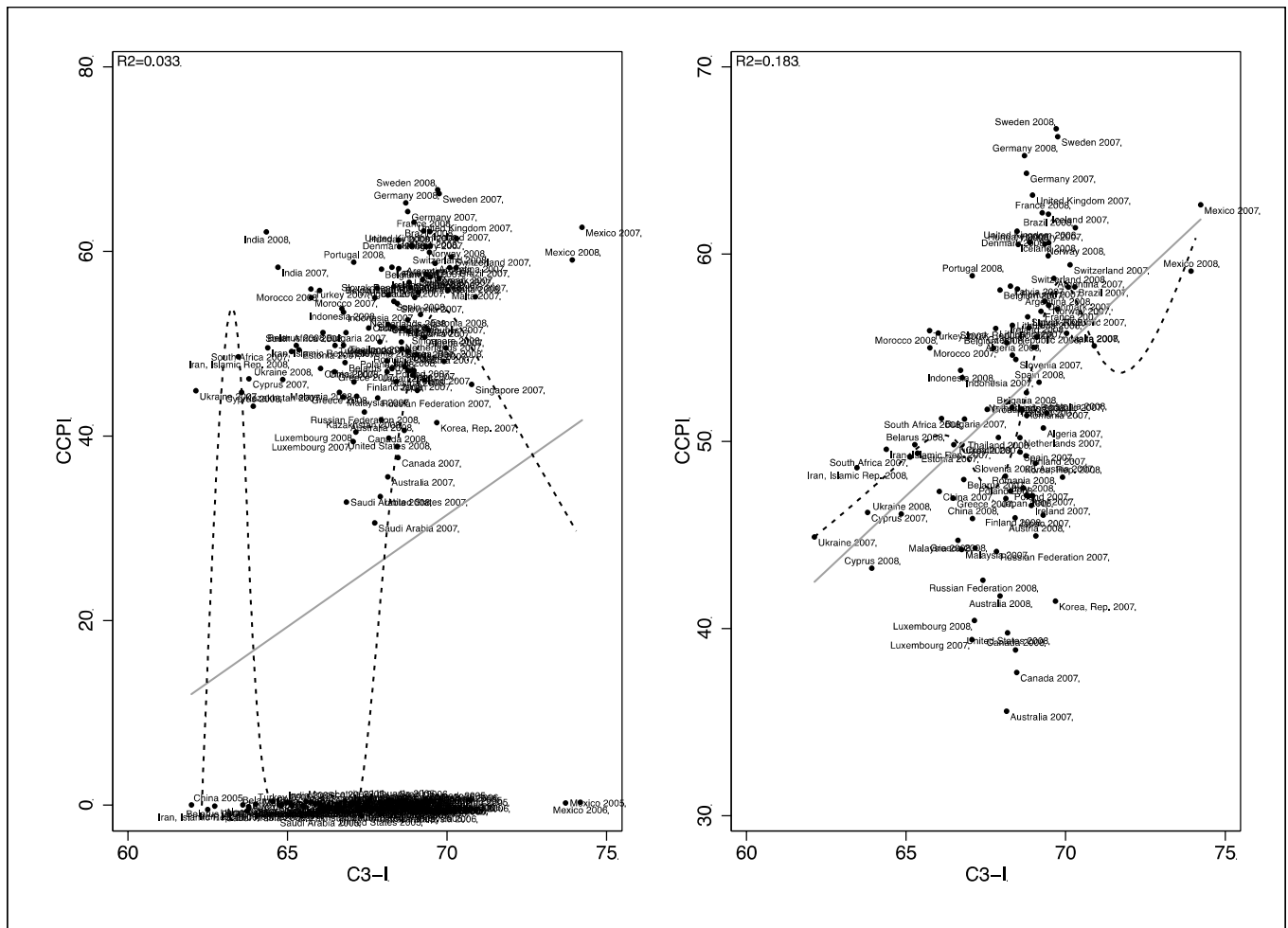
In comparing the first two rows in Table 7.2, we observe two important differences between the two indices. First, even though we re-coded the C3-I to the interval [0; 100] to facilitate comparison with the CCPI, both measures remain different in terms of their scaling and overall distribution. A bivariate OLS regression for the two indices shows that a one-unit increase in our index is associated with a 2.43-point increase in the CCPI ( $p < 0.01$ ). Hence, the latter appears to be more ‘generous’ in locating countries within its scale. Second, variation on the CCPI is stronger than variation on the C3-I. This may indicate that the former index is more susceptible to outlier problems.

The left panel in Figure 7.4 illustrates this issue more thoroughly. It depicts the scatter plot of the C3-I and the CCPI and also indicates the linear fit of a simple OLS regression and a median spline to facilitate the interpretation of the directional relationship between the two indices. This panel, in combination with additional test statistics, suggests that the CCPI may underestimate the climate policy performance of countries located below a value of 35 on the scale [0; 100]. However, it should be noted that those observations below the threshold of 35 mostly pertain to the year 2005 for which the CCPI used a somewhat different measurement concept than for all other following years (Burck and Bals 2011). We therefore dropped those observations and re-calculated the mentioned statistics. The last two rows in Table 7.2 and the right panel in Figure

7.4 summarize these results. Note that we drop outliers exclusively with reference to the CCPI. This approach is more conservative, because it increases the fit of the CCPI by definition, but not necessarily the fit of the C3-I.

**Table 7.2** Descriptive Statistics for the CCPI and the C3-I

	Obs	Mean	SD	Min	Max
CCPI	217	26.08	26.34	-1.16	66.70
C3-I	217	67.78	1.98	61.99	74.23
CCPI – Outliers Dropped	101	52.10	6.89	35.58	66.70
C3-I – Outliers Dropped	101	68.13	1.83	62.12	74.22



**Fig. 7.4** Relationship between the CCPI and the C3-I

*Note:* Solid line shows linear fit of OLS regression. Dashed line shows median spline

Dropping outliers from the data decreases the variance of the CCPI considerably and, hence, reduces the impact of influential observations on the relationship between the two indices. It also leads to a greater approximation between the scales of the two indices. However, the variance of the C3–I still remains much smaller than the variance of the CCPI. In fact, it remains virtually unchanged compared to the full sample. We conclude that the C3–I and its underlying coding rules are less likely to be affected by outliers than the CCPI – even after dropping those cases that appear as influential observations in the CCPI.

These differences notwithstanding, Table 7.2 and Figure 7.4 suggest that both indices still measure the same underlying concept and do not seem to be too far away from each other – conceptually and empirically. After discarding the outliers, the right panel in Figure 7.4 shows that most cases (country–year observations) are similarly classified by each measure: countries that contribute little to global climate change mitigation in a given year receive low values on either index; countries that contribute, relatively, more in a given year are ranked high on both measures. Yet, important differences remain – most importantly, the higher variance of the CCPI.

#### *7.4.2 Are Democracies more ‘Climate Friendly?’ A Simple Model Comparison*

To examine possible implications of such differences, we revisit a rather well studied issue, namely the impact of democratic regime type on climate change policy. Many authors, and as I did in one of the previous chapters above, argue that democracies, relative to non–democracies, are more likely to provide environmental public goods, i.e., environmental quality, at the national level (e.g., Payne 1995; McGuire and Olson 1996; Lake and Baum 2001; Fredriksson et al. 2005; Bernauer and Koubi 2009), and are more inclined to cooperate in international environmental problem solving efforts as well (e.g., Congleton 1992; Neumayer 2002a; 2002b; Ward 2006; 2008; Bernauer et al. 2010). The underlying reasoning is that democratic governments need to provide more benefits in the form of public goods, including environmental public goods, to a

relatively large (compared to non-democracies) part of the electorate in order to survive politically (Bueno de Mesquita et al. 2003; Downs 1957). In democratic states, citizens also benefit from greater civil liberties, e.g., freedom of speech, press and association, which enable them to voice concerns over environmental problems more effectively – both at national and international levels. Therefore, at any given level of environmental risk, popular demand for more environmental protection is likely to be stronger in democracies, and policy-makers are likely to experience stronger incentives to meet this demand. Empirically, Neumayer (2002a), for example, finds that democracies are more likely than autocracies to participate in international environmental treaties. He concludes that ‘a spread of democracy around the world will lead to enhanced environmental commitment worldwide’ (Neumayer 2002a: 158; see also Congleton 1992; Beron et al. 2003; Bättig and Bernauer 2009).

**Table 7.3** Effect of Democracy on Climate Policy Performance – the CCPI and C3–I in Comparison

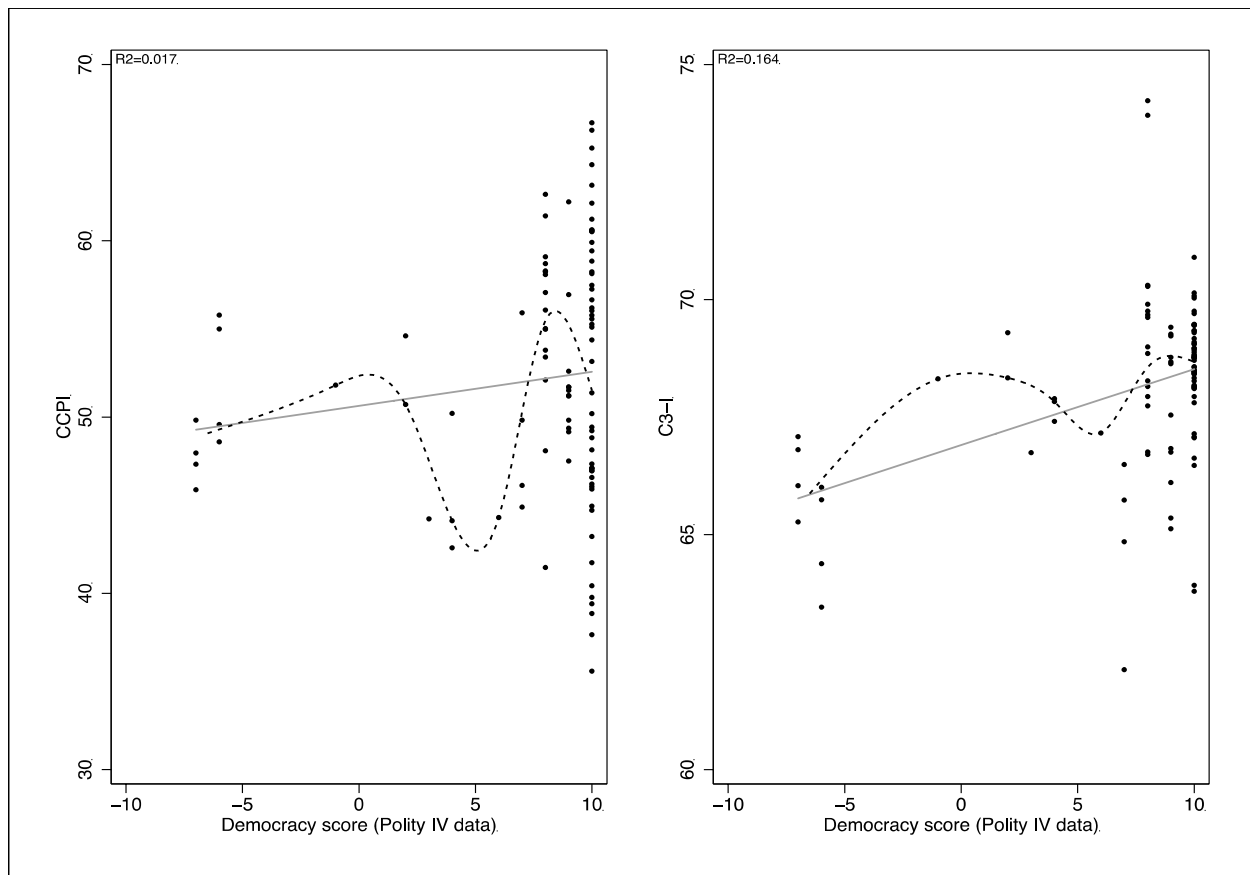
	Model 7.1 (CCPI – Full)	Model 7.2 (C3–I – Full)	Model 7.3 (CCPI – Constrained)	Model 7.4 (C3–I – Constrained)
Democracy	0.195 (0.108)	0.133 (0.035)***	0.193 (0.132)	0.162 (0.035)***
Constant	24.73 (0.904)***	66.86 (0.335)***	50.64 (0.986)***	66.91 (0.336)***
Obs	217	217	101	101
F	3.24	14.33***	2.13	21.92***
R <sup>2</sup>	0.002	0.136	0.017	0.164
RMSE	26.38	1.847	6.865	1.690

Robust standard errors clustered on country in parentheses

\* significant at 0.05 level, \*\* at 0.01 level, \*\*\* at 0.001 level (two-tailed)

To evaluate this hypothesis we use Polity IV data to measure democracy (Marshall and Jaggers 2004) and the CCPI and C3–I, respectively, to measure the behavior of countries vis-à-vis global climate change. The combined *Polity2* item from Polity IV ranges from –10 (full autocracy) to +10 (full democracy). The overall CCPI and C3–I indices are used as separate dependent variables. Again, we compare results for the full sample for which both the C3–I and

the CCPI offer comparable data, and for the constrained sample without outliers. Note that we deliberately do not consider any further explanatory variables that may also affect climate policy and emissions. Including more covariates would only reduce parsimony and degrees of freedom in this simple comparison. Moreover, while other factors may also influence countries' climate policy, existing research shows that democracy is a key determinant in this respect (Bättig and Bernauer 2009). In other words, we are, in this simple comparison of the CCPI and C3–I, not interested in exhaustively explaining climate policy performance, but mainly interested in comparing the effect of democracy on climate policy performance as measured by the two different indices. Note, however, that our results and key findings remain unchanged when departing from this narrow comparison and estimating the effect of democracy on either index using their full sample data, i.e., 2005–2011 for the CCPI and 1996–2008 for the C3–I. Table 7.3 and Figure 7.5 summarize the findings.



**Fig. 7.5** Effect of Democracy on Climate Policy – the CCPI and C3–I in Comparison

*Note:* Solid line shows linear fit of OLS regression. Dashed line shows median spline

In all four regression models shown here, democracy has a positive effect on climate policy performance. But the observed democracy effect is statistically significant only in those models using the C3–I data. A one–unit increase on the democracy variable is associated with a 0.133–unit increase on the C3–I in Model 2 (0.162 in Model 7.4). As a corollary, the models using the CCPI exhibit a weaker statistical model fit than the models employing our index. On average, the democracy variable explains 15% of the variance on the C3–I, but only 0.95% on the CCPI. Furthermore, and as expected, those models that discard the outliers perform better.

The reasons for differences in statistical model fit and significance of the democracy effect can be derived from Figure 7.5. The latter shows a graphical presentation of Model 7.3 (left panel) and Model 7.4 (right panel). Although we dropped the most influential (outlier) observations for those calculations, the CCPI still includes more outliers than the C3–I. An important indication for this is the downward slope of the median spline toward the value 5 on the democracy variable, as shown in the left panel. While the panel on the right depicts a similar downward slope at this exact value of the democracy variable, it is less influential. Note, additionally, that the observations in that section of either graph are virtually the same. A systematic pattern beyond that could not be identified for these cases, though. The most noteworthy differences are observed for those cases that score the maximum on the democracy variable (+10), i.e., full democracies. While the C3–I indicates that there are many such countries that vary in terms of their climate policy performance, the CCPI varies even more. This strong variation of the CCPI implicates that democracy has next to no explanatory power when using this index for climate policy performance.

The observation that democracy has a strong and significant effect on climate policy performance as measured by the C3–I, but no significant effect on such performance as measured by the CCPI cannot, *a priori*, be taken as evidence that the C3–I is more suitable for large–N statistical research on climate policy. Nevertheless, we tend to think that the C3–I produces more reliable results, both because its (transparent) coding rules result in fewer outliers, and because we were able to empirically confirm a well–established theoretical argument and corresponding

empirical evidence for the democracy–environment relationship when using the C3–I for the analysis.

### *7.4.3 Disaggregating the Two Indices – A Comparison of Outcome and Output Components*

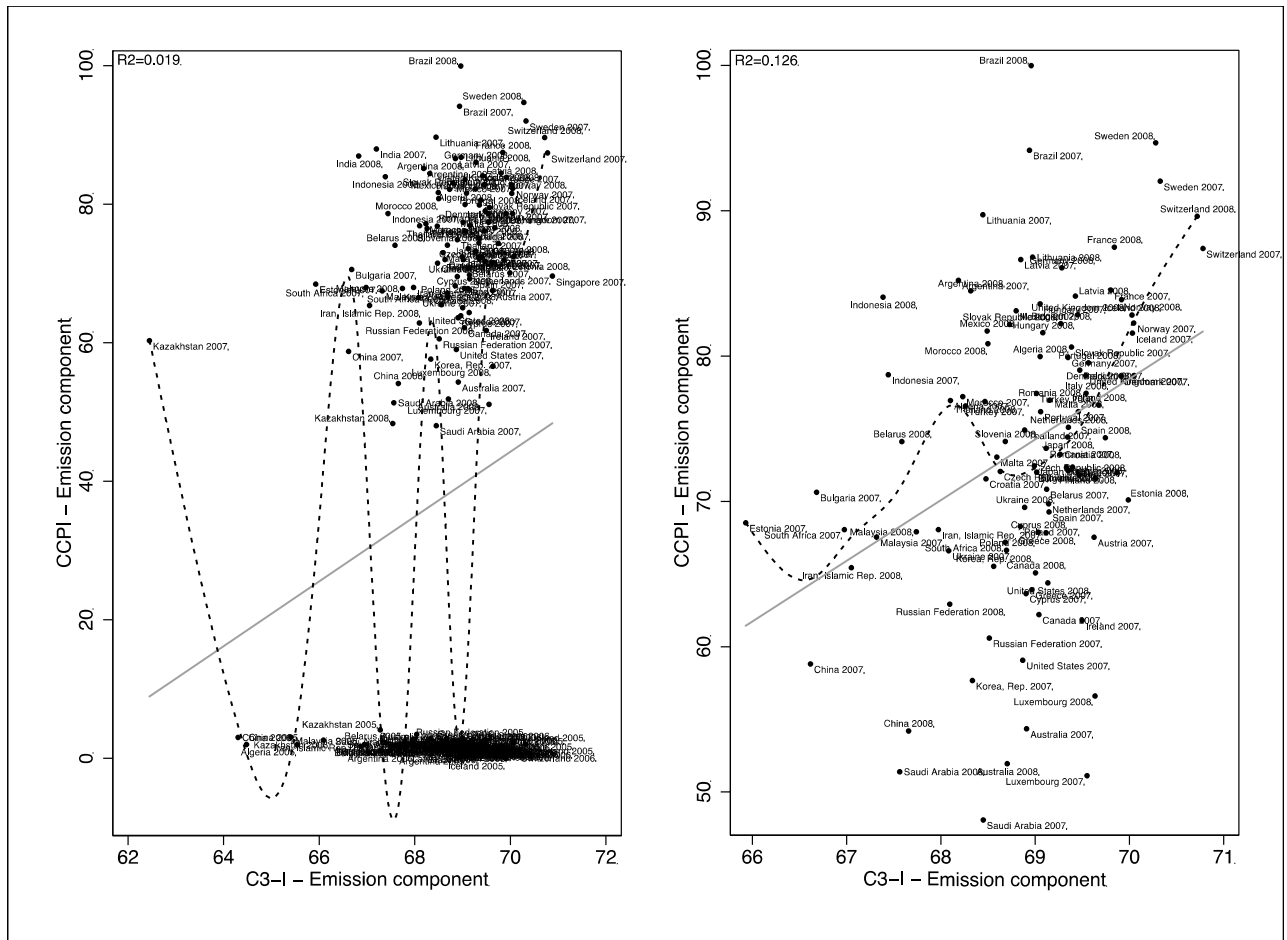
As noted above, the CCPI and the C3–I differ conceptually with respect to their policy output (commitment) and outcome (emissions) components. Hence, it is useful to distinguish between these components and find out whether differences between the overall indices are driven by one or the other component.

**Table 7.4** Descriptive Statistics for the CCPI and C3–I Emission Components

	Obs	Mean	SD	Min	Max
CCPI Emiss.	217	38.34	36.75	0	100
C3–I Emiss.	217	68.73	1.09	62.45	70.88
CCPI Emiss. – Outliers Dropped	104	73.91	10.16	48.09	100
C3–I Emiss. – Outliers Dropped	104	68.92	0.86	65.93	70.78

To start with, note that the CCPI distinguishes between an outcome (emissions) trend and an outcome level component. To facilitate comparison with the C3–I, we combine these two components into one outcome (emissions) component. Table 7.4 and Figure 7.6 show basic descriptive statistics and depict the relationship between the emission components of the two indices. Table 7.4 indicates that the CCPI is affected by multiple outliers on this component; the standard deviation in the full sample of overlapping (with the C3–I) years and countries is nearly 40. These influential observations can be identified via the left panel in Figure 7.6.





**Fig. 7.6** Emission Components of the CCPI and C3-I in Comparison

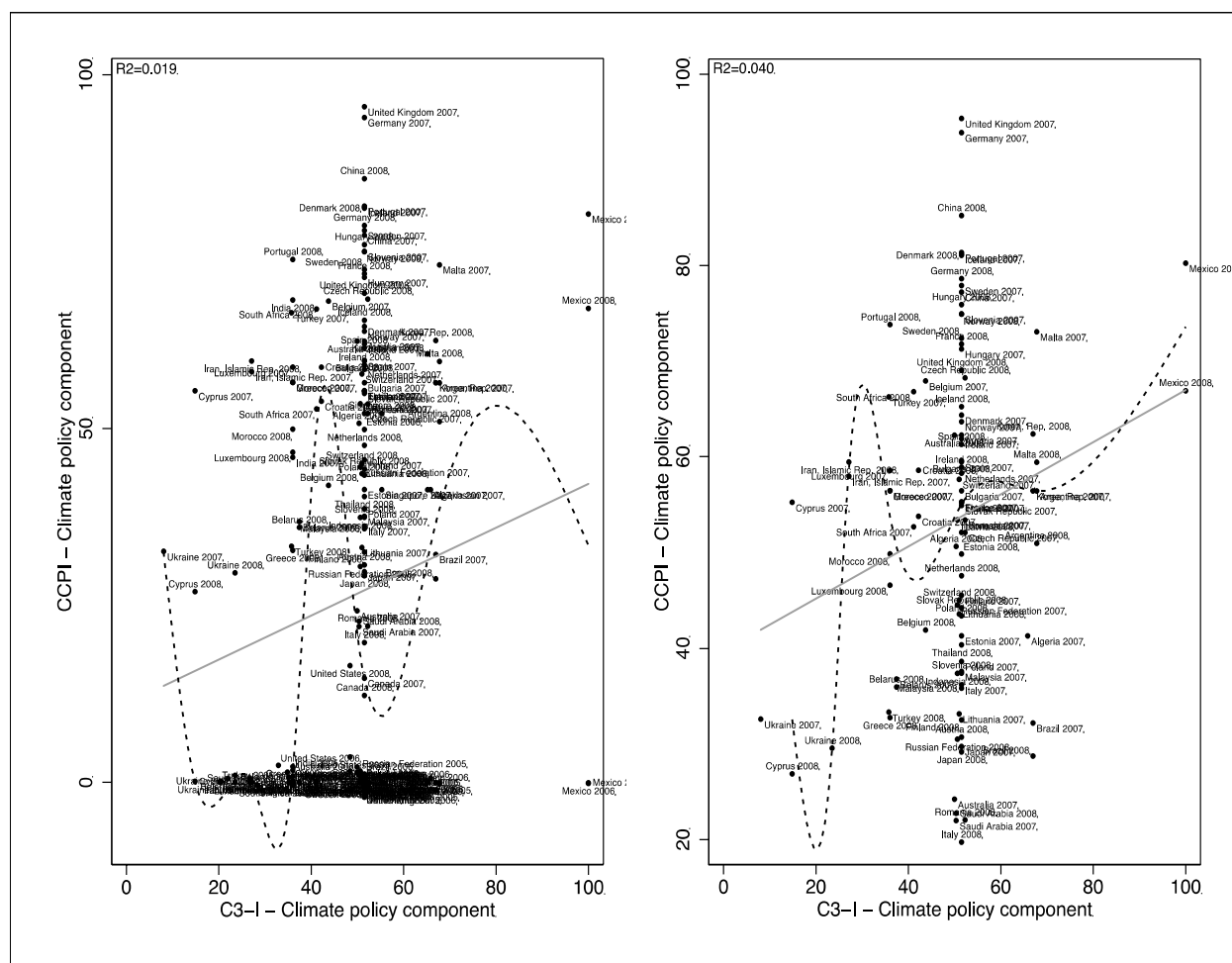
*Note:* Solid line shows linear fit of OLS regression. Dashed line shows median spline

Following the same procedure as above, we then identified and dropped those outliers in order to discard their influence on the overall picture. The variance then decreases for both indices, which also shows up in the right panel of Figure 7.6. This panel indicates not only an improved model fit, but also that the median spline now deviates only marginally from the underlying OLS linear fit. These results suggest that the differences between the overall CCPI and C3-I (as shown in Table 7.2 and Figure 7.4) are *not* primarily driven by differences between the emission components of the two indices.

We now turn to the climate policy components of both the CCPI and the C3-I, for which we compute the same statistics as for the emission components. It turns out that the climate policy component of the CCPI is the principal source of differences between the CCPI and the C3-I. The standard deviation of the former is more than twice as large as the standard deviation of the

**Table 7.5** Descriptive Statistics for the CCPI and the C3–I Climate Policy Components

	Obs	Mean	SD	Min	Max
CCPI Policy	217	26.20	29.05	−2.12	95.45
C3–I Policy	217	48.46	13.03	8.02	100
CCPI Policy – Outliers Dropped	100	53.30	17.35	19.72	95.45
C3–I Policy – Outliers Dropped	100	49.61	12.80	8.02	100

**Fig. 7.7** Policy Components of the CCPI and C3–I in Comparison

*Note:* Solid line shows linear fit of OLS regression. Dashed line shows median spline

latter. Moreover, the left panel in Figure 7.7 indicates that countries below a value of 20 on the CCPI's climate policy component are influential cases that deviate strongly from the main pattern. Again, these observations are mainly for the year 2005, for which the CCPI used a slightly different coding rule than for later years (Burck and Bals 2011). When dropping those observations and estimating the quantities of interest again, the variance in both indices decreases to some extent, but not substantially. This indicates that there must be another source of variation.

This additional source derives from those cases that score 50 on the policy component of the C3–I, but vary along the continuum of the policy component of the CCPI. The right panel in Figure 7.7 shows that cases like the UK in 2007 are overrated by the CCPI (or underrated by the C3–I), whereas cases like Italy in 2008 are underrated by the CCPI (or overrated by the C3–I).

## 7.5 Conclusion

Valid and reliable measurement of countries' climate policy performance is important for policy-making and analytical purposes. In this chapter, we have presented a new dataset that builds on one of the two existing datasets that cover a large number of countries and measure country performance both in terms of political behavior and emissions. While the CCPI uses a more complex construct for its emissions component, the C3–I, which builds on the CI of Bättig et al. (2008), is more parsimonious, yet also more straightforward and more strongly associated with the concept of sustainable development. Moreover, while the CCPI uses presumably more encompassing expert assessments for its climate policy component, the C3–I relies on simpler types of objectively observable behavior of countries. The latter approach has the advantage of allowing for extension of the index's time-coverage backward – which is not possible for the CCPI. Finally, the C3–I is available for many more countries and a longer time period than the CCPI.

The comparison in this chapter demonstrates, nevertheless, that the CCPI and C3–I are positively correlated and measure useful empirical expressions of the underlying theoretical concept of interest here, i.e., countries' efforts to address the global problem of climatic change. In light of the differing advantages and shortcomings of the two indices discussed in our research, it would be premature to claim that one or the other index is superior. Instead, we summarize the key differences between the CCPI and C3–I in Table 7.6.

**Table 7.6** Summary Comparison of CCPI and C3–I

	CCPI	C3–I
Country Coverage	≤ 58	≤ 172
Time Period	2005–2011	1996–2008*
Emissions Component	trends, levels	trends, levels, relative to income
Policy Component	expert assessments	observed behavior
Weighing of Emissions Relative to Policy	80% / 20%	50% / 50%
Forward Extension Possible	yes	yes
Backward Extension Possible	no	yes
Outlier Problems	yes	no
Results in ‘Democracy Analysis’	insignificant	significant

Policy component of the C3–I is available for 1996–2010

We conclude by outlining two crucial policy implications of our research. First, our data contribute to efforts by governments, international institutions, and non–governmental organizations to identify “leaders” and “laggards” in global climate policy. In the words of Bättig et al. (2008: 486f), “indices hold a high potential to convey simple messages and are appreciated by their users.” We strongly believe that the C3–I will prove useful to that end.

Second, more systematic identification of leaders and laggards also facilitates capacity building initiatives. As Chayes and Chayes (1993) note, non–compliance with international norms is the exception rather than the rule because most countries have an interest not to violate agreements to which they have committed themselves. If non–compliance occurs, however, it often happens unintentionally due to rule ambiguity or capacity limitations. For example, “annual financial contributions [to the UNFCCC secretariat] are paid more frequently by developed countries than by developing countries” (Bättig et al., 2008: 487). Compliance can, therefore, be increased through transparency, clear rule interpretation, and – first and foremost – capacity building. A prerequisite for efficient and effective capacity building is, though, that those states most in need are recognized in the first place.

## **8 Civil Society Lobbying and Countries' Cooperation in Climate Change Policy – A Matching Approach**

### **8.1 Introduction<sup>74</sup>**

Civil society actors more and more seek to influence official actors for increasing the chances that final policy outputs and outcomes are closer to their own preferences (Baumgartner et al. 2009; Dür and De Bièvre 2007; Jordan et al. 2004). The previous qualitative literature extensively studied this phenomenon by examining different civil society groups in different issue areas, e.g. trade unions at the national level or business groups in terms of market regulation. One issue area that scholars – including this manuscript – increasingly focused on, and continue studying, constitutes environmental politics, where the UNFCCC seems to enjoy a somewhat special attention (e.g. Albin 1999; Arts 1998; Bernhagen 2008; Betsill 2002; 2006; 2008; Betsill and Corell 2001; 2008; Carpenter 2001; Corell and Betsill 2001; Fisher 2010; 2011; Fowler and Shaiko 1987; Gulbrandsen and Andresen 2004; Steffek and Ferretti 2009).

An avenue for exerting such influence in this particular institution is that environmental ENGOs and business lobbying groups seek membership access to states' negotiation delegations in order to affect – or even change – official actors' policies.<sup>75</sup> Membership in countries' bargaining delegations generally gives civil society groups more possibilities to pursue their goals effectively and to directly exert influence on policy makers (Clark 1995: 595; Clark et al. 1998:

---

<sup>74</sup> At the time of submitting this habilitation, a version of this single-authored chapter has been submitted to an international peer-reviewed journal.

<sup>75</sup> Please note that other avenues for exerting influence do exist as well and are of crucial importance. In fact, I concur with most scholars who distinguish between 'insider' and 'outsider' strategies (Betsill 2006; Beyers 2004; Gulbrandsen and Andresen 2004), i.e. activities that seek to affect negotiators directly at the bargaining table (inside) or by creating pressure from the outside via shaping public opinion. However, examining all those different strategies would go beyond the scope of my research and, hence, it exclusively concentrates on lobbying influence from civil society actors as part of national delegations.

13f; Gulbrandsen and Andresen 2004; Mathews 1997; Raustiala 1997: 722f; Steffek and Nanz 2007: 21): they are not excluded from the unofficial sessions between governments, which are usually the decisive places for drafting conference declarations or treaties; they actively participate in informal ‘backdoor diplomacy;’ they receive official state documents; and they are able to present proposals. Gulbrandsen and Andresen (2004: 73) conclude accordingly that civil society actors are likely to ‘have the most far-reaching influence on future climate negotiations if they foster ways to work closely and collaboratively with key negotiators and governments.’<sup>76</sup>

The most immediate questions against this background are possibly whether civil society lobbying influences states’ international environmental policies or not? If so, does it facilitate or hamper cooperation (Albin 1999; Arts 1998; Bernhagen 2008; Betsill 2002; 2006; 2008; Betsill and Corell 2001; 2008; see also Dür and De Bièvre 2007; Jordan et al. 2004; Mahoney 2009: 185)? The previous literature I pointed to sought to address this before and Betsill (2008: 203), for example, concludes that ‘increasing ENGO participation in and influence on multilateral negotiations on the environment and sustainable development leads to better outcomes.’ However, I argue that these studies are likely to suffer from two problems that, if not addressed, may bias the results. First, assessing the effectiveness of particular forms of interest group lobbying in UNFCCC delegations must consider the prior selection stage of access, or the question of how specific factors may affect the willingness of states to grant access to these delegations in the first place. Both stages are intertwined and those state delegations that actually see civil society participation are unlikely to be a random sample (see King and Zeng 2007). If this selection effect is not controlled for, our findings are likely to exaggerate or underestimate the impact of interest group lobbying. Second, examining the influence of interest groups’ lobbying poses further methodological challenges. While it is particularly difficult to measure

---

<sup>76</sup> Note that civil society access to delegations does not lead to more influence automatically. However, and as I emphasized, it is an important factor for gaining influence over the negotiators (Betsill 2008; see also Betsill and Corell 2001; Fisher and Green 2004; Fisher 2010). For example, Hochstetler et al. (2000: 604) state that the influence of civil society actors has been growing, but they still lack ‘the procedural access [that] is required to become consistently strong brokers’ (see also Friedman et al. 2005). Yamin (2001: 157) similarly contends that the ability of civil society to influence policy makers ‘depends on [...] the degree of access they have to policymakers and relevant documentation.’

influence *per se* (Baumgartner et al. 2009; Dür and De Bièvre 2007; Mahoney 2009; Klüver 2011; 2012), even existing operationalizations cannot control for alternative explanatory factors. As a result, if policy outputs and outcomes match interest groups' preferences, we cannot necessarily conclude that these outputs and outcomes emerged due to the lobbying activities of those interest groups. Hence, this ignores the effect of various covariates, making it difficult to determine the true causal effect of civil society influence.

Therefore, I suggest a genetic matching approach (Diamond and Sekhon 2010; Sekhon 2007) that addresses both problems. First, matching corrects for the non-random assignment while controlling for the existence of confounding factors. Second, it pre-processes the data to form quasi-experimental contrasts by sampling a subset of comparable cases from the overall pool of observations. The only – and actually crucial – exception is that these 'most-similar' cases differ in their treatment, i.e. the civil society lobbying in UNFCCC state delegations. By using partly new data on states in the UNFCCC, their delegations, and their cooperative efforts in 1995–2008, I then examine which influence different civil society groups exert on states' climate change policies. This research provides important insights into the effectiveness of civil society lobbying activities, and potentially into the negotiation and bargaining dynamics at the UNFCCC in general. While the results indicate that ENGOs are hardly influential, business lobbying groups matter – but contrary to our expectations, they enhance states' cooperation.

The chapter proceeds as follows. As a theoretical background, the next section briefly summarizes one of the predominant arguments on civil society lobbying influence in international environmental policy. I then argue that the previous research may not yet have accounted for the persistent selection effects, and that we still face challenges in determining a causal impact of lobbying. Afterwards, I describe the research design, focusing on the genetic matching approach and the data used for my empirical analysis. The succeeding section presents the results and I finish the chapter with a summary of my findings, while highlighting implications for future studies and policy makers.

## 8.2 The Influence of Civil Society in International Environmental Policy – Theoretical Background

The existent literature predominantly argues that it is civil society's expertise and provision of information, which gives it the opportunity to access states' delegations and, ultimately, to exert influence (Bauer et al. 1963; Potters and van Winden 1992; Austen-Smith 1993; Lohmann 1995; 1998; Grossman and Helpman 2001; Crombez 2002; Broscheid and Coen 2003; Bouwen 2004; 2009; Bernhagen and Bräuninger 2005; Eising 2007).<sup>77</sup>

International environmental negotiations, including the CoPs of the UNFCCC, are highly complex. Decision makers need information to enhance their understanding of the problem in question and to increase the awareness of the implications of various policy alternatives. Primarily, it is frequently argued then that civil society actors are better positioned than governments to provide expertise of technical or scientific nature. Non-governmental organizations dedicate a considerable amount of their resources to gathering and disseminating information, and have 'built-up expertise in many of the scientific, economic, and social and technical disciplines relevant to sustainable development' (Yamin 2001: 157; see also Albin 1999; Betsill 2006; Gough and Shackley 2001; Princen 1994: 34ff; Raustiala 1997: 726f; 2001). Furthermore, civil society provides negotiators with 'access to competing ideas from outside the normal bureaucratic channels' (see Raustiala 1997: 727f). Eventually, a higher amount of information decreases official negotiators' level of uncertainty and, hence, improves their bargaining positions.

Against this background, if governments are unable to collect this information themselves, they might approach civil society groups, which devote considerable resources to policy research and offer information, evaluation, and expertise. In turn, by following the resource exchange

---

<sup>77</sup> As stated, the information provision rationale is only one possible explanation for how civil society actors may lobby effectively. Due to its prominence in the literature (Corell and Betsill (2001: 87), for instance, state that 'the provision of knowledge and information is the key resource for influence') and space limitations, I will discuss this argument as a theoretical background solely, while noting that alternative theories do exist.



perspective (Christiansen et al. 2010; Dür 2008; Lehmbruch 1979; Baccaro and Simoni 2008), these interest groups gain influence over policy makers in exchange for their resources, which allows them to shape policy outputs and outcomes according to their own ideal points. Hence, pro-environmental interest groups will try to provoke countries to commit to stronger environmental policies, to comply with standards, and to improve those regulations that states already agreed on. On the other hand, business lobbying groups directly represent those actors that produce hazardous emissions or are engaged in resource depletion, and these might be concerned that tough(er) environmental policies increase industry costs and then damage domestic industries (Bernhagen 2008; Falkner 2005; Levy 2005; Mitchell 2003; Ulph 1997). Ultimately, however, it is an empirical question whether these different lobbying influences are effective or not.

### **8.3 Selection Effects and the Causal Impact of Civil Society Lobbying in Negotiation Delegations – Persistent Challenges in Current Research**

The previous section suggests that civil society groups can exert influence over decision makers if they are part of official state delegations, and that the former have to offer informational resources in exchange for access. Although I generally concur with this argumentation, I claim that the previous literature on this topic may suffer from two crucial, predominantly empirical, shortcomings: neglecting a selection effect and difficulties in drawing causal inferences from civil society lobbying.

First, the existent literature ignores a crucial step – both theoretically and empirically: it does not account for the inclusion stage of civil society organizations, i.e. that stage in which countries decide in the first place if and which civil society groups shall be included in a delegation. Civil society participation and the extent of it in international environmental negotiations are likely to

be subject to the preferences of national governments. For example, governments may be willing to commit themselves to stronger environmental agreements anyway. Most democracies belong to this category (Bättig and Bernauer 2009). These states, however, would then desire the provision of knowledge and information by ENGOs and, in fact, are also more likely to allow ENGOs to participate and have access to the negotiations. In contrast, if governments lack this willingness, they may be more reluctant to allow ENGOs to participate and to exert influence here. Having said that, if states are selective when deciding whether to include civil society groups in a negotiation delegation or not, any analysis on the effectiveness of civil society influence in countries' negotiation delegations is likely to be biased unless we control for this selection effect (King and Zeng 2007).

Second, while earlier efforts to define civil society influence on environmental policies were characterized by a high degree of inconsistency (see Betsill and Corell 2001), the recent literature seems to have reached consensus to the extent that civil society has to shape the negotiations according to their own preferences (e.g., Albin 1999; Arts 1998; Betsill 2002; 2006; 2008; Betsill and Corell 2008; Carpenter 2001; Corell and Betsill 2001; Fisher 2010; 2011; Gulbrandsen and Andresen 2004; Steffek and Ferretti 2009). More specifically, Betsill and Corell (2008; see also 2001: 74) suggest that civil society influence only occurred effectively, when civil society groups 'intentionally transmit information' to state actors, which 'alters the latter's actions from what would have occurred without that information.'

Despite efforts to capture this definition in either qualitative or quantitative work (see Dürr 2008; Dür and De Bièvre 2007; Jordan et al. 2004; Klüver 2011; 2012; Mahoney 2009: 185), I believe that previous approaches were hardly successful in determining the true causal effect of civil society lobbying. In more detail, policy outputs and outcomes could converge with the ideal points of a civil society group, but we do not know if this particular group *caused* this convergence (Dürr 2008; Klüver 2011; 2012). Other explanations might be possible and this problem of 'controlling for alternative explanatory factors' refers to the fact that if policy outputs and outcomes reflect an interest group's policy preferences, it does not necessarily mean that the

policy output can be attributed to the lobbying activities of a particular interest group. The objectives of civil society groups and the policy preferences of decision makers could, for instance, just coincide and policies meet the interests of the civil society then only by chance (Barry 1980a; 1980b). In the following, I seek to address both persistent challenges via a genetic matching approach (Diamond and Sekhon 2010; Sekhon 2007).

## 8.4 Research Design

### *8.4.1 Methodology: Genetic 1:1 Matching with Replacement*

Previous research dealt with non-random assignments and issues of causal inference either through an instrumental variable approach or the use of selection estimators. However, Gilligan and Sergenti (2008) demonstrate that these purely parametric strategies are inaccurate in addressing these problems, since they rely on unverifiable modeling assumptions and are generally not able to deal with the influence of other existent covariates. In turn, this may lead to the underestimation of the actual effect of civil society lobbying in states' negotiation delegations and the results are potentially biased.

Matching is a more effective solution to these problems. It is 'a methodology for reducing bias due to observed covariates in observational studies for causal effects' (Rubin and Thomas 1996: 249), while it corrects for the non-random assignment and controls for the existence of confounding factors (Ho et al. 2007; King and Zeng 2007; Morgan and Winship 2007). More specifically, matching pre-processes the data to form quasi-experimental contrasts by sampling a subset of comparable cases from the overall pool of observations. The observations contained in this subset resemble each other as closely as possible, i.e. the differences due to confounding factors are reduced to a minimum. The only – and actually crucial – exception is that these

‘most-similar’ cases differ in whether they received the treatment or not. Based on this, I can make inferences about the causal effect of civil society lobbying in negotiation delegations, where any difference between the two sets is then solely attributed to the treatment (see Gilligan and Sergenti 2008).

Given the theoretical background above, I rely on three different treatments and, thus, on three different matched samples: *Civil Society*, *Business Lobbying Groups*, and *Environmental Lobbying Groups*. Afterwards, I can estimate the causal effect of each treatment by analyzing the matched sample using parametric methods in order to control for any remaining imbalances (see Ho et al. 2007; Morgan and Winship 2007). Here, I use fixed-effects models to correct for the bias due to non-constant variances and for taking into account intra-group correlations. I also consider a linear time trend (*Trend*) for addressing potential problems with autocorrelation.

#### 8.4.2 *Dependent Variable*

To analyze the effect of civil society lobbying in states’ delegations on countries’ cooperation in international environmental policy, I focus on states’ compliance with UNFCCC climate change policies. I use the country-year as the unit of analysis and update Bättig et al.’s (2008; see also Bättig and Bernauer 2009) aggregated cooperation index. This index is comprised of ‘two indicators that measure whether and how fast countries have committed to the UNFCCC and the Kyoto Protocol. Three additional indicators quantify whether and how effectively measures have been implemented in line with these agreements. These three measures are reporting, financial contributions, and development of per capita CO<sub>2</sub> emissions in relation to the per capita gross domestic product of each country’ (Bättig et al. 2008: 478). The original index is of cross-sectional nature, rendering it unsuitable for my purposes. Hence, I followed the coding instructions in Bättig et al. (2008) and extended the index to a time-series cross-sectional format with time-varying components for 120 countries over the time period 1995–2008. Due to my

methodological approach, observations with missing values had to be deleted case–wise and the final index ranges in [50.42; 95.95], with higher values indicating higher cooperative efforts and compliance with the climate change regime.

#### 8.4.3 *Treatments and Confounding Factors*

I consider civil society lobbying in states' negotiation delegations as the core factor of interest and I operationalize this via three different dichotomous variables. More specifically, I relied on Böhmelt's (2013) data on the composition of state delegations in the UNFCCC for 1995–2011 and identified if a state delegation included a) any civil society actors; b) business lobbying groups; or c) environmental lobbying groups. My first variable, *Civil Society*, thus receives a value of 1 in a specific country–year if at least one civil society group was officially part of its UNFCCC delegation (0 otherwise). My second variable, *Business Lobbying Groups*, measures delegation composition via the membership of industrial interest groups: an observation takes on a value of 1 in a specific year if a state delegation entailed at least one civil society group that represented business or industry interests. Finally, the treatment variable *Environmental Lobbying Groups* follows the same coding procedure as for the second treatment, while I substitute business interest groups for NGOs.<sup>78</sup>

With regard to the confounding factors, I essentially follow Bättig and Bernauer (2009) and Böhmelt (2013) who examine the factors influencing compliance with the UNFCCC and the inclusion of civil society in negotiation delegations, respectively. Due to space limitations, I simply introduce these variables here shortly, but point to the detailed theoretical rationales given in the respective studies. First, Bättig and Bernauer (2009) consider measures for trade, CO<sub>2</sub> emissions, and population density. The data for each variable are taken from the World Bank

---

<sup>78</sup> While it is an advantage of these operationalizations that they cover all paths to influence in state delegations, it is not clear through which process civil society groups in fact exert influence (Dür 2008). Although this black–boxing problem cannot be solved completely, the concentration on one particular phase of the policy cycle could make this problem less severe, since 'fewer actors are involved than in the complete policy–making process' (Klüver 2011; 2012). Hence, next to the theoretical focus of this chapter, concentrating on civil society lobbying influence in a UNFCCC state delegation as policy formulation phase has also methodological reasons.

Development Indicators: *Trade* is operationalized via the sum of service exports and imports divided by the value of GDP (in current U.S. dollars); *CO2 Emissions* is measured in metric tons per capita, including carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring; finally, *Population* refers to the midyear population divided by land area in square kilometers.

Second, both Bättig and Bernauer (2009) and Böhmelt (2013) include a democracy measure. I use a variable from Polity IV (Marshall and Jaggers 2004), ranging from –10 (full autocracy) to +10 (full democracy). Since these data omit values of microstates, I impute missing information with data taken from Gleditsch (2008).

Third, Böhmelt (2013) incorporates five variables moreover. *ENGO Domestic* measures the level of domestic state-level civil society strength by the number of national ENGOs registered in each country using data from the archive of the International Union for Conservation of Nature (IUCN) (see Binder and Neumayer 2005). Further, two factors pertain to the salience of an issue. In the context of the UNFCCC, countries' willingness to include civil society actors in their negotiation delegations should reflect the degree to which they are vulnerable to climate change and global warming. Following recent research (Mendelsohn et al. 2006; Srinivasan 2010), salience is, therefore, operationalized by geographical location and income. With regard to the first item, a dichotomous variable is applied for members of the Alliance of Small Island States (AOSIS). With regard to the second item, I measure income by GDP per capita using data from the World Bank. Additionally, I include the quality of a country's bureaucracy, for which the Political Risk Services Group's (PRSG) International Country Risk Guide (Howell 2011) is employed. These data comprise one variable that – based upon expert assessments – measures the bureaucratic quality of a country on a 0–4 scale, where higher values stand for more effective bureaucratic capacities. Finally, big and 'important' countries should be less willing than small ones to include civil society actors in their delegations (see Neumayer 2002: 150). I employ a dichotomous major power variable from the Correlates of War Project (Singer 1988).

Table 8.1 summarizes the variation inflation factors (VIFs). The individual values for the treatments and the confounding factors in either sample never exceed the cut-off value of 5, indicating that multicollinearity does not influence the precision of my coefficient estimates. In other words – and perhaps contrary to initial expectations – there is not much overlap between, for example, the highest performing bureaucracies and democratic regimes.

**Table 8.1** Variation Inflation Factors of Explanatory Variables

	Any Civil Society Group	Business Lobbying Groups	Environmental Lobbying Groups
Treatment	1.06	1.01	1.06
Trade	1.44	1.62	1.37
CO2 Emission	2.03	2.15	1.93
Population	1.09	1.20	1.15
ENGO Domestic	1.89	1.87	1.80
Salience (AOSIS)	1.10	1.20	1.10
Major Power	1.49	1.39	1.39
Salience (Income)	3.25	4.02	3.29
Bureaucratic Quality	3.85	4.28	3.73
Democracy	1.66	1.39	1.73
Trend	1.17	1.19	1.14

## 8.5 Empirical Findings

In a first step, I employ genetic one-to-one matching with replacement (Diamond and Sekhon 2010; Sekhon 2007). Thus, I obtain a matched sample of 1,068 observations for *Civil Society* (408 for *Business Lobbying Groups* and 944 for *Environmental Lobbying Groups*) due to the fact that my original data identified 534 delegation country-years that did include civil society groups (204 business lobbying groups and 472 environmental lobbying groups). Depending on the treatment, I used the following variables to match observations from the treatment group with those from the control group: *Democracy*, *Salience (Income)*, *Salience (AOSIS)*, *ENGO Domestic*, *CO2 Emission*, and *Trade* were employed for those samples using *Civil Society* and *Business Lobbying Groups* as the treatment, respectively; *Democracy*, *Bureaucratic Quality*,

*Salience (AOSIS)*, *Salience (Income)*, *ENGO Domestic*, and *Trade* were used for that sample with *Environmental Lobbying Groups* as the treatment. These different sets of variables proved to be optimal with regard to the overall achieved balance.

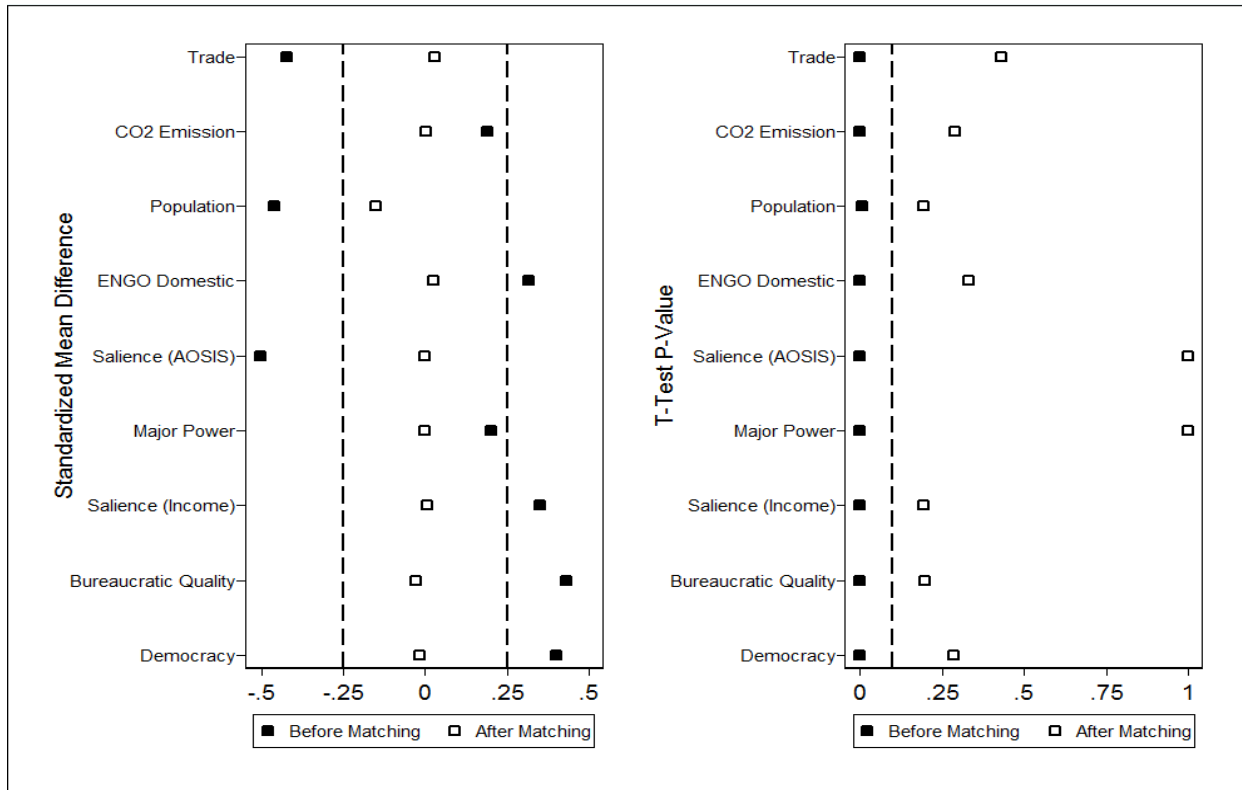
I refrained from matching on all explanatory variables due to two reasons. First, this would not avoid matched datasets with still significant imbalances. Second and in the words of Ho et al. (2007: 216f):

*‘The theoretical literature emphasizes that including variables only weakly related to treatment assignments usually reduces bias more than it will increase variance, and so most believe that all available control variables should always be included. However, the theoretical literature has focused primarily on the case where the pool of potential control units is considerably larger than the set of treated units. Some researchers seem to have incorrectly generalized this advice to all datasets. If, as is often the case, the pool of potential control units is not much larger than the pool of treated units, then always including all available control variables is bad advice. Instead, the familiar econometric rules apply about the trade-off between the bias of excluding relevant variables and the inefficiency of including irrelevant ones: researchers should not include every pre-treatment covariate available.’*

My approach, thus, corresponds to the general genetic algorithm used by Sekhon (2007: 12ff), which maximizes the smallest *p-value* for *T-Tests* in each iteration of the matching procedure.

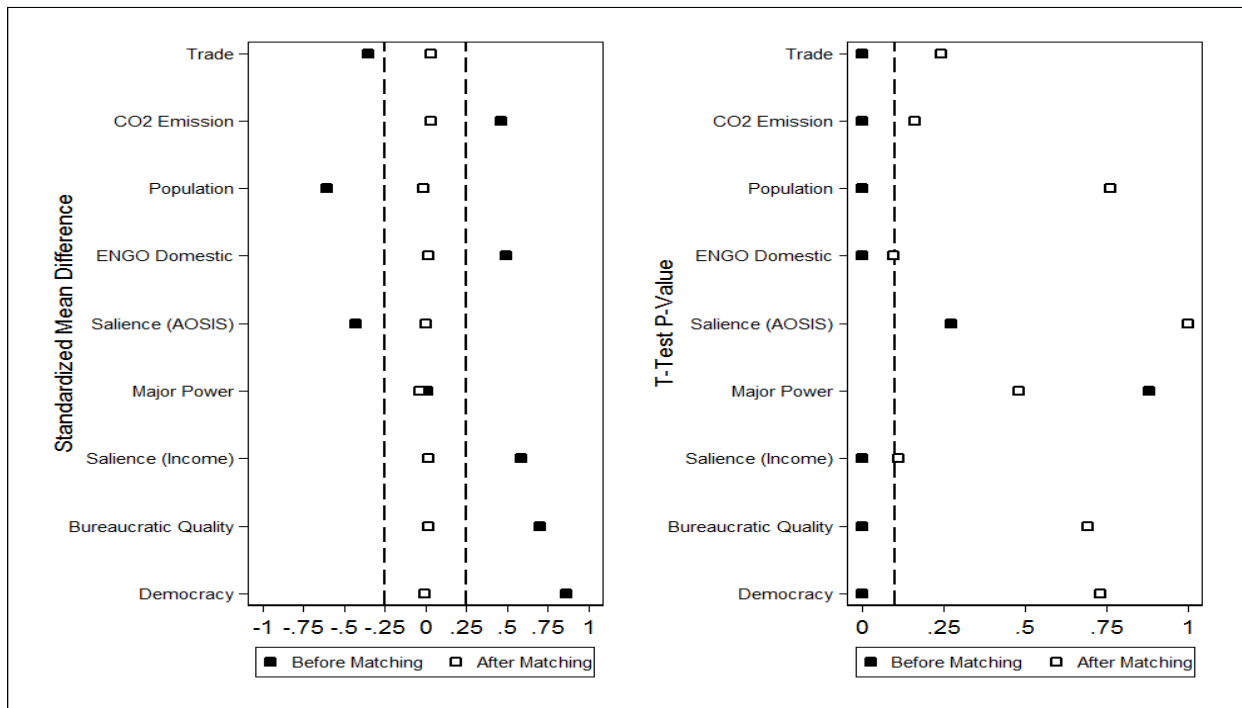
Before and after I conducted the matching, I assess the degree of distributional balance of the explanatory items between the treatment and the control group. Figures 8.2–8.4 depict my findings via two common balance statistics. With regard to the left panel in either figure, a standardized bias within  $[-0.25; 0.25]$  indicates that a variable is well balanced (Ho et al., 2007: 220). In terms of the second panel in either figure, I report the *p-values* of simple *T-Tests* (0.10 as threshold level) for identifying if real differences between the treatment and the control group do persist. Evidently, the distribution of most explanatory variables significantly differs between the treated and the control group before I matched observations. After the matching, however, my samples display a substantially improved balance to the extent that we can hardly distinguish between observations in either group and the only real difference between observations actually is the treatment. More specifically, all standardized biases range within  $[0.25; -0.25]$  and the *p-values* are all well above 0.1.





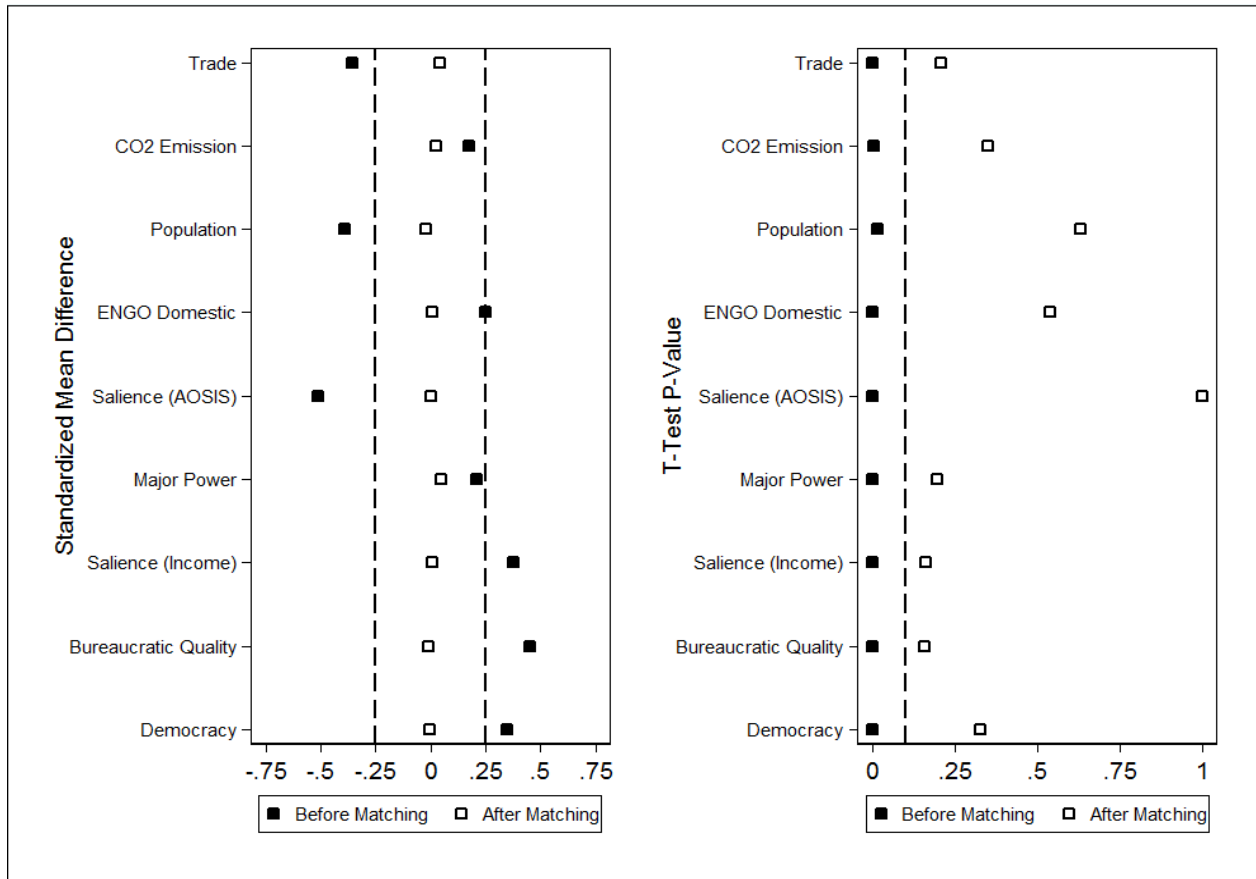
**Fig. 8.1** Matching: Balance Statistics

*Note:* Balance statistics refer to *Civil Society* as treatment variable. Dashed lines mark specific threshold levels (or intervals) for respective balance statistic



**Fig. 8.2** Matching: Balance Statistics

*Note:* Balance statistics refer to *Business Lobbying Groups* as treatment variable. Dashed lines mark specific threshold levels (or intervals) for respective balance statistic



**Fig. 8.3** Matching: Balance Statistics

*Note:* Balance statistics refer to *Environmental Lobbying Groups* as treatment variable. Dashed lines mark specific threshold levels (or intervals) for respective balance statistic

As indicated above, Ho et al. (2007: 211f) suggest using the same parametric estimator with the same set of controls for the matched data one would have employed in the first place, i.e. before the matching. Due to the use of the matched sample, however, the importance of the functional form that is characteristic for any parametric estimator is significantly lowered, specification assumptions matter less, and the reliability of the results is more strongly given.<sup>79</sup>

<sup>79</sup> Note, however, that the confounding factors are only included for addressing any remaining imbalances, but an interpretation of their table entries is not possible. I also conducted several diagnostic, robustness, and specification checks in order to increase the confidence in my findings. First, Clarke (2005) shows that the inclusion of control variables may actually increase the bias instead of decreasing it. However, unreported model estimations demonstrate that making amendments in this regard, i.e. dropping all controls, does not affect the substance of my findings. Second, the model specifications may suffer from unit roots, i.e. the individual time series might not be stationary to the extent that their expected values and population variances are not independent from time. Tests indicate that my dependent variable is stationary, however: fixed-effects models including the lagged dependent variable on the right hand side only revealed F-tests that allow me to reject the null hypothesis of the lagged dependent variable's coefficient being equal to 1 for all estimated models above. I also do not find evidence for a detrimental impact of high leverage data points. Finally, the results do not change when employing the ordinary OLS-estimator for a pooled and purely cross-sectional sample. In other words, my findings are robust across many different model specifications and their substance is not changed accordingly.

Table 8.2 summarizes the results from the final models.

**Table 8.2** The Influence of Civil Society Lobbying on Countries' Climate Change Policy

	Model 8.1 (Civil Society)	Model 8.2 (Civil Society)	Model 8.3 (Business)	Model 8.4 (Business)	Model 8.5 (Environment)	Model 8.6 (Environment)
Treatment	0.161 (0.118)	0.147 (0.120)	0.132 (0.080)*	0.134 (0.082)*	0.026 (0.103)	0.008 (0.104)
Trade	-0.014 (0.017)	0.004 (0.017)	-0.068 (0.023)***	-0.063 (0.024)***	-0.051 (0.019)***	-0.041 (0.019)**
CO2 Emission	-0.445 (0.122)***	-0.447 (0.124)***	-0.449 (0.074)***	-0.445 (0.076)***	-0.627 (0.107)***	-0.618 (0.108)***
Population	0.001 (0.005)	-0.002 (0.005)	-0.006 (0.013)	-0.017 (0.013)	-0.001 (0.007)	-0.003 (0.007)
ENGO Domestic	-0.005 (0.043)	-0.009 (0.043)	-0.008 (0.033)	0.013 (0.033)	-0.066 (0.037)*	-0.074 (0.037)**
Salience (AOSIS)		-0.122 (0.658)		0.080 (0.348)		-0.048 (0.640)
Salience (Income)	0.001 (0.000)***		0.001 (0.000)***		0.001 (0.000)***	
Bureaucratic Quality	0.900 (0.275)***	0.891 (0.278)***	-0.351 (0.246)	-0.393 (0.251)	0.058 (0.280)	-0.146 (0.281)
Democracy	-0.171 (0.042)***	-0.193 (0.043)***	-0.045 (0.041)	-0.062 (0.042)	-0.148 (0.038)***	-0.164 (0.038)***
Trend	-0.085 (0.025)***	-0.024 (0.022)	0.031 (0.023)	0.085 (0.019)***	0.003 (0.024)	0.050 (0.020)**
Constant	62.22 (1.329)***	70.10 (1.334)***	73.72 (1.523)***	74.96 (1.524)***	73.58 (1.362)***	74.53 (1.349)***
Obs	1,068	1,068	408	408	944	944
Fixed Effects	yes	yes	yes	yes	yes	yes
F	8.32***	5.46***	8.87***	6.94***	7.54***	5.89***
Rho	0.664	0.775	0.956	0.980	0.909	0.925

Table entries are coefficients. Standard errors in parentheses. Major Power variable omitted due to collinearity

\* significant at 0.1 level, \*\* at 0.05 level, \*\*\* at 0.01 level (two-tailed)

The treatment variables capturing civil society's lobbying influence in states' UNFCCC delegations are all positively signed, but largely insignificant. More substantially, these findings emphasize that – after controlling for the non-random assignment of civil society actors in negotiation delegations and when trying to achieve true causal inferences – civil society groups in general and environmental lobbying groups in particular are not able to crucially influence countries' climate change policies. This essentially provides one of the first systematic and robust empirical findings for those studies arguing that civil society actors hardly exert any influence, but are only considered in negotiation delegations as a symbolic recognition, undertaken mostly out of principle. For example, democracies might want to include non-state actors in their

negotiation delegations to fend off civil society criticism and increasing their ability to ‘sell’ international negotiation outcomes to domestic audiences (see e.g., Stasavage 2004), while civil society groups can also enhance political responsiveness and democratic accountability (Fox and Brown 1998). However, this has little to do with civil society’s potential to effectively lobby official state actors.

Note, however, that the treatment in Models 8.3–8.4 (*Business Lobbying Groups*) seems to be an exception to this rule. More specifically, countries’ compliance with UNFCCC climate change policies increases by 0.132 (Model 8.3; 0.134 in Model 8.4) units if state delegations actually do include those civil society groups that represent business and industry interests. While this effect seems to be small in substance, the methodological approach allows us to draw the causal inference that this positive impact on states’ cooperative efforts in international environmental politics stems precisely from the lobbying of business groups in the UNFCCC negotiation delegations. This finding may come across somewhat surprising, since business lobbying groups are generally supposed to oppose compliance with the climate change regime (Bernhagen 2008; Falkner 2005; Levy 2005; Mitchell 2003; Ulph 1997). However, Bernhagen (2008) offers an explanation for why business civil society actors might actually lobby (effectively) for stronger compliance with UNFCCC regulations: compliance with international environmental agreements can also create opportunities for business. For example, ‘after facing initially hostile industry positions, the Montreal Protocol on Substances that Deplete the Ozone Layer, enjoyed the support of firms and industry organizations in major countries including the U.S. who feared that looming stricter domestic regulations would put them at a disadvantage in international markets unless an international environmental agreement would internationalize, and thereby equalize, the regulatory burden. Moreover, firms may become proactive on environmental governance if they perceive competitive benefits through stricter environmental regulation’ (Bernhagen 2008: 82; see also DeSombre 2001: 58; Falkner 2005: 119ff; Porter and van der Linde 1995; Bansal and Roth 2000).

## 8.6 Conclusion

This chapter sought to increase our understanding of civil society's lobbying efforts in states' negotiation delegations at the UNFCCC. I offered an alternative approach for addressing persistent problems of non-random assignments and causal inference. The results emphasize that civil society groups in general and ENGOs in particular are unlikely to affect or change official actors' climate change policies. On the other hand, the lobbying efforts of business groups do influence states' policies effectively – contrary to our expectations, this influence is positive, however. This indicates that business lobbying groups increasingly perceive environmental regulations and climate change policies not as a threat toward their interest, but as a possibility.

Against this background, the primary contribution of this chapter has been to empirically test whether civil society groups can lobby effectively in states' negotiation delegations, while correcting for existent methodological problems. However, my research design does not allow for a direct observation of the exerted influence or of the employed strategies of different civil society actors. Therefore, it is the task of future research to study these more thoroughly and in a disaggregated fashion. Moreover, this chapter also extended existing data on countries' climate change policies within the UNFCCC. Building upon Bättig et al. (2008: 487), future research and policy makers might want to draw on these time-series cross-sectional data for comparing the influence of political factors, climate change variables, or economic variables in order to allow both science and policy to address upcoming environmental challenges more carefully.



## 9 Final Remarks: Discussion and Conclusion

The preceding chapters sought both to theoretically study and empirically test different aspects within the context of government–civil society interaction and global environmental governance. Chapter 2 started with outlining some general concepts of IEAs, state actors, and non–governmental groups and primarily focused on the application of social network analysis for the study of the effectiveness of one IEA. However, I also introduced a variable that meant to capture the influence of ENGOS at a domestic level, but obtained inconclusive results. At this point, I essentially concluded that we need a more nuanced and systematic examination of ENGOS in particular and CSOs in general, and that we must depart from the rather naïve analysis employed in this chapter or in earlier research on this topic.

Therefore, chapters 3 and 4 addressed the question of when and under what circumstances we might observe the onset of government–civil society interaction within the framework of UNFCCC negotiations. I believe that both of these chapters might be fruitful in advancing our knowledge in this regard. On one hand, chapter 3 disaggregated a prominent theoretical explanation in the literature and convincingly obtained evidence for a negative finding: according to my results, it seems unlikely that governments value the information provision skills of CSOs and, in turn, grant these actors access to their UNFCCC negotiation delegations due to that. Although this only allows disproving the validity of the information provision logic in this context, it is as equally important as a positive finding. As King, Keohane, and Verba (1994: 105) emphasize, both positive and negative results can ‘provide just as much information about the world.’ That being said, my findings here indicated that other factors are likely to drive the onset of interaction between official actors and civil society. Thus, on the other hand, chapter 4 built

upon the social network approach already introduced in the second chapter and found evidence that it is more likely that the onset of government–civil society interaction is driven by legitimacy concerns. Quantitative analyses using regular probit models, forecasting techniques, as well as qualitative survey data equally suggested that this conclusion holds true. In other words, chapter 3 and chapter 4 in combination helped answering the question under what circumstances we might observe that official actors grant civil society access, i.e., when interaction does occur.

After shedding light on the onset of government–civil society interaction, the remaining chapters of this manuscript essentially thought of addressing the question of civil society effectiveness, influence, or impact. To this end, the fifth chapter analyzed states’ ratification behavior of global environmental treaties and found evidence for counterintuitive, perhaps even paradoxical effects of civil society. While CSOs, in this chapter particularly ENGOs, might be able to facilitate countries’ ratification behavior on average, this positive impact substantially decreases – and might even completely disappear – in democracies. First and foremost, it was argued that this stems from a failure of collective action – a failure that was notably not only found in the fifth chapter, but also for and in several other empirical analyses in this manuscript.

Chapter 6 extended the perspective of chapter 5 by combining CSO impact with ENGOs’ membership in states’ negotiation delegations, i.e., more powerful opportunities for exerting influence, which has been identified as a crucial aspect within the nexus of official governmental actors and civil society. More specifically, the purpose of this chapter was to analyze ENGOs’ impact on states’ commitment levels toward environmental agreements. Again, I found evidence for a collective action problem: while more numerous ENGOs and those with better access to official actors might be able to affect states’ commitment levels positively, a combination of both factors, i.e., more numerous ENGOs that also have a better access, can induce the opposite outcome. However, and as I pointed out in this chapter, despite various strategies for controlling for the outlined selection problem pertaining to the onset of government–civil society interaction, chapter 6 might not have been able to fully control for this issue eventually.



As a result, chapter 7 and chapter 8 intended to address this aspect more convincingly. In a first step, new time–series cross–section data on countries’ climate change policies were introduced. It was also demonstrated that these data are potentially likely to be more reliable, accurate, and valid than existing sources. In a second step, I then employed these data using matching techniques that systematically control for selection bias and also facilitate a causal interpretation of the findings by controlling for confounding factors. Somewhat surprisingly, this final analysis obtained evidence that ENGOs are unlikely to affect states’ climate policies at all, while business groups seem to exert a robust positive influence.

These main findings of my research are straightforward and worth knowing. In the remainder of this chapter, I first discuss what this work adds to the academic debate in total and what kind of policy implications we can draw from my results. Second, research only can make progress via a lively academic debate. Hence, my theoretical arguments and research designs as outlined above may be only one possible approach out of many. Consequently, I address some potential weaknesses and issues of my conducted work and summarize suggestions for further research along those lines.

## **9.1 Academic Contribution and Policy Implications**

The main findings as summarized are novel and rest on newly developed arguments in the theoretical literature. Hence, I believe that each specific chapter as such contributes to our understanding of both the onset of government–civil society interaction and its impact. From a broader point of view, however, the thesis may also add to the academic debate and provide policy recommendations in the following ways. First, despite its increasing importance, civil society and its effects remain a largely underexamined field of study, especially in the context of quantitative approaches. To address this, I thought of developing and empirically testing already

existing and new approaches that were used before for similar research interests. As stated above, understanding why we observe that governments seek civil society participation in global environmental governance in the first place could also help understanding civil society impact more thoroughly. This manuscript therefore contributes to having a more accurate grasp – especially from a large- $N$  perspective – of the direct causal effects of CSOs, since it sheds further light on why some countries welcome civil society participation while others do not see such an involvement at all.

Second, next to innovative theoretical arguments and novel empirical findings, I also may have advanced the scientific work by introducing two approaches to the study of civil society involvement and effectiveness that have largely been ignored so far. On one hand, to my knowledge, chapter 2 and chapter 4 are the only detailed examinations using social network analysis in this context. Social network analysis offers the possibility to draw inferences from analyzing actors' interactions, ties, and relationships with each other. Given that the focus of this manuscript has indeed been the various linkages, ties, and exchanges between official actors and CSOs, i.e., an interactive process *per definitionem*, I believe that my research contributes to fostering social network analysis in the academic study of government–civil society interaction and its effectiveness. On the other hand, I argued that states that grant civil society access to their delegations are unlikely to be a random sample and drawing causal inferences from lobbying influence poses further methodological challenges. Hence, I tried to address these problems of selection and causal inference at various points in the manuscript, but – most prominently – employed genetic matching that corrects for the non–random assignment while controlling for the existence of confounding factors. However, explicitly recognizing this selection problem and properly addressing it still has to emerge in the study of civil society influence and it is not yet conventional wisdom that ignoring the selection problem may either over– or underestimate its consequences, leading to biased results.

Third, and with respect to the policy implications of my work, the concluding sections of the different chapters already highlighted, for example, how official actors such as states (or their

representatives) may be able to use CSOs more effectively – and vice versa. Nonetheless, let me draw attention to the further policy implications that may not have received the appropriate attention so far. For example, despite the focus of this manuscript on CSOs and governmental actors, chapter 2 also demonstrated that social capital is likely to be an important determinant for IEA effectiveness. An ‘optimal’ institutional design should, thus, incorporate conditions and regime design features that are most favorable to building, establishing, and fostering social capital (see Ward 2006). These could encompass regular meetings to enhance communication flows, thereby reducing uncertainty about interests of co-participating countries, as well as the formation of monitoring agencies to further the development of trust among regime members. Moreover, this second chapter emphasized that strategic behavior matters, because states condition their environmental protection efforts on other states’ actions. Reliable and credible monitoring is paramount then to assure regime parties of cooperative behavior and to avoid (possibly false) perceptions of free riding. Finally with regard to chapter 2, and this somewhat goes against recent empirical evidence (e.g., Murdoch et al. 1997; Finus and Tjøtta 2003; Ringquist and Kostadinova 2005; Aakvik and Tjøtta 2011), IEAs may indeed affect states’ behavior. In the light of the ongoing debate about alternative means to protect the environment, this finding is a strong case for investments into existing IEAs and regimes.

Forth, my results suggest that those interested in increasing civil society involvement in a global sphere should start by trying to consider CSO involvement in their own national delegations first. As demonstrated in chapter 4, this would facilitate the diffusion of CSO involvement to other countries. Obtaining observer status in global governance fora, which is what most CSOs focus on, hinges on collective intergovernmental decisions to grant access to CSOs. In contrast, each country is free to decide on its own how its national delegation is composed. Civil society involvement could thus be promoted quite effectively via unilateral national steps that have ripple effects through the global governance network. Ultimately, we could observe something that really deserves the term ‘global governance.’

That being said, fifth, my research shows that CSOs can make a difference and affect the

decision making of state actors. Assuming that this may enhance legitimacy, accountability, and even the effectiveness of official representatives in global environmental governance, both policymakers and CSO representatives have to be aware of the limitations here as well. On one hand, ENGOs seem to face problems of collective action when trying to affect state actors. My research shows that this pertains to exerted influence at a domestic level in terms of IEAs' ratification and to international negotiations over environmental issues. In other words, ENGOs can be effective, but only under certain circumstances and CSO representatives have to be aware of these. Again, I would like to point to Bernstein et al. (1992) who stressed that 'when so many different [ENGO] actors are drawn into the process, there is a danger that our demands may be blunted [...]. Consequently, we may end up with a lowest common denominator, which is no better than the kind of compromises diplomats engage in.' On the other hand, when treating CSOs from a broader perspective, industry lobbying organizations do also belong to this category of actors. Conventional wisdom might assume that their interests are somewhat opposing to ENGOs and, in fact, constitute a threat to the environment. While I do not want to neglect anecdotal evidence and qualitative case studies that argue the same way, my last substantial chapter found evidence that the lobbying efforts of business groups do influence states' policies effectively, although contrary to our expectations, this influence is positive, however. This indicates that business groups may increasingly perceive environmental regulations and climate change policies not as a threat toward their interests, but as a possibility. As in the case of the Montreal Protocol that enjoyed the support by industry organizations after some point, firms may have given up their previously held hostile positions toward environmental regulations and became proactive on environmental governance as they now perceive benefits, possibilities, and opportunities through stricter environmental regulation (Bernhagen 2008: 82; see also DeSombre 2001: 58; Falkner 2005: 119ff; Porter and van der Linde 1995; Bansal and Roth 2000). Ultimately, while I certainly refrain from recommending that we should welcome business lobbying in future environmental negotiations always, necessarily, and under all circumstances, I strongly suggest that domestic audiences, policy makers, and perhaps even ENGOs might want to

begin seeing the potential in industrial lobbying for promoting environmental governance as well. At the same time, strengthening ENGOs, granting them access to official fora, while acknowledging their limitations under some circumstances seems also promising in increasing the levels of legitimacy, accountability, and effectiveness in global environmental governance.

## **9.2 Avenues for Further Research**

Despite the striking findings that have the potential to contribute to the academic debate and comprise a set of crucial policy implications, the approach in this manuscript presents only one possible way out of many. As presented in the introduction and the literature reviews of each chapter, the research on civil society and its interaction with official actors has gone far toward getting a more accurate understanding of the conditions of an interaction between these actors and its impact or effectiveness. Throughout my work, I was able to find empirical evidence for most of my hypotheses, developed new theoretical arguments, and obtained novel empirical evidence, but, as indicated, there may be some limitations to my work and many other avenues for further research do exist. First, although I believe having valid arguments for constraining most of the analyses to the UNFCCC, the generalization of the results to other international institutions or instances of government–civil society interaction may be subject to criticism. Further analyses should, therefore, amplify scope by seeking to move ahead through compiling new data on other regimes, since the UNFCCC addresses a relatively specific field of international law. Previous work has shown that participatory arrangements are scarce in the fields of finance and security issues, for example, but these are different from environmental politics or the UNFCCC in particular. This also would give rise to the expectation that openness depends not only on issue salience, but also on the costs of losing secrecy that is supposedly higher in negotiations on trade, finance, or security matters.

Similarly, albeit different, my data compilation efforts in this research also support academic research that focuses on the factors that influence countries' national climate policies and, hence, national contributions to the global public good of avoiding major climatic changes induced by anthropogenic factors. This research area is currently moving from empirical models that emphasize the effects of state characteristics (e.g., income levels or democratic institutions) on climate policy performance to models that connect state characteristics and other domestic-level factors with international network effects and dynamic processes of policy diffusion (e.g., Bernauer et al., 2010; 2013; Hafner-Burton et al., 2008; Spilker, 2012; von Stein, 2008; see also Cao and Prakash, 2012). Such research requires high-quality cross-sectional times-series data for large number of countries and years and, hence, more data coding work seems necessary.

Third, the main contribution of chapter 3 has been to theoretically unfold the information provision mechanism and empirically test its validity in the case of civil society participation in states' UNFCCC negotiation delegations. That being said, many important questions remain. For example, as indicated, further research could address the proposed alternative explanations. Especially research areas such as theories on collective action and its related problems might prove to be useful here. In this context, I examined the validity of the information provision argument in the context of states' UNFCCC delegations only from the demand side, i.e., a state perspective. However, it may be worth examining the supply side, i.e., civil society characteristics and incentives as well and more thoroughly than it was possible in this study. Accordingly, Risse-Kappen (1995) highlights the importance of internal characteristics such as resources, strategies, and leadership skills in relation to structural factors, e.g., domestic structures and transnational institutions, in influencing the policy impact of civil society groups (see also Albin 1999: 382f; Sell and Prakash 2004: 169; Stroup and Murdie 2013). Due to the current lack of data covering a broad set of actors and years on this, however, again more data collection efforts seem necessary to address this issue more effectively (see, e.g., Bernhagen 2012: 16).

With regard to the fourth chapter, more detailed surveys of government representatives are

needed to better understand the reasons why CSO representatives are included, or not included, in national delegations in global climate governance. Such surveys should also identify variation across countries with respect to how autonomous included CSOs are from a respective government, and what constraints are imposed on CSO representatives within delegations.

Fifth, throughout this manuscript, I treated CSOs, ENGOs, and business lobbying groups largely as a ‘black box,’ not addressing specific characteristics of these actors and only examined their degree of access or their number of participants. However, CSOs are highly diverse; they might comprise local, national, regional, or international organizations, all with potentially different foci and objectives (Gemmill and Bamidele–Izu 2002; Raustiala 1997: 721). Further, the effectiveness of civil society is essentially driven by factors such as funding, the overlap with the interests of participating governments, the level of expertise, persistent lobbying, issue framing, or the successful advocacy and mobilization of environmental issues at both the national and the international level (Albin 1999: 382). It thus seems an effort worth making to disaggregate CSOs’ characteristics and, in turn, examine their impact on various factors more thoroughly.

Finally, the primary contribution of chapters 7 and 8 has been to empirically test whether civil society groups can lobby effectively in states’ negotiation delegations, while correcting for existent methodological problems. However, my research design did not allow for a direct observation of the exerted influence or of the employed strategies of different civil society actors. Therefore, it is the task of further research to study these more thoroughly and in a disaggregated fashion. Qualitative approaches have the potential to uncover these causal pathways in a detailed way and may prove more useful than quantitative setups here. Moreover, I also extended existing data on countries’ climate change policies within the UNFCCC in these chapters. Building upon Bättig et al. (2008: 487), future research and policy makers might want to draw on these time–series cross–section data for comparing the influence of political factors, climate change variables, or economic variables in order to allow both science and policy to address upcoming environmental challenges more carefully.





## Bibliography

- Aakvik, Arild, and Sigve Tjøtta. 2011. Do Collective Actions Clear Common Air? The Effect of International Environmental Protocols on Sulfur Emissions. *European Journal of Political Economy* 27 (2): 343–351.
- Albin, Cecilia. 1999. Can NGOs Enhance the Effectiveness of International Negotiation? *International Negotiation* 4 (3): 371–387.
- Alter, Karen J., and Sophie Meunier–Aitsahalia. 2009. The Politics of International Regime Complexity. *Perspectives on Politics* 7 (1): 13–24.
- Angrist, Joshua, and Jörn–Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton, NJ: Princeton University Press.
- Arrow, Kenneth J. 1963. *Social Choice and Individual Values*. New York: John Wiley and Sons.
- Arts, Bas. 1998. *The Political Influence of Global NGOs: Case Studies on the Climate and Biodiversity conventions*. Utrecht: International Books.
- Arts, Bas. 2003. *Non–State Actors in Global Governance. A Power Analysis*. Paper prepared for the 2003 ECPR Joint Sessions, Edinburgh, Scotland.
- Arts, Bas. 2005. Non–State Actors in Global Environmental Governance: New Arrangements beyond the State. In: Mathias Koenig–Archibugi and Michael Zürn (eds). *New Modes of Governance in the Global System: Exploring Publicness, Delegation, and Inclusiveness*. New York: Palgrave Macmillan (pp. 177–200).
- Austen–Smith, David. 1993. Information and Influence: Lobbying for Agendas and Votes. *American Journal of Political Science* 37 (3): 799–833.

- Austen-Smith, David. 1997. Interest Groups: Money, Information, and Influence. In: Dennis Mueller (ed). *Perspectives on Public Choice. A Handbook*. Cambridge: Cambridge University Press (pp. 296–321).
- Axelrod, Robert, and Robert O. Keohane. 1985. Achieving Cooperation under Anarchy: Strategies and Institutions. *World Politics* 38 (1): 226–254.
- Baccaro, Lucio, and Marco Simoni. 2008. Policy Concertation in Europe: Understanding Government Choice. *Comparative Political Studies* 41 (10): 1323–1348.
- Bäckstrand, Karin. 2008. Accountability of Networked Climate Governance: The Rise of Transnational Climate Partnerships. *Global Environmental Politics* 8 (3): 74–102
- Bailer, Stephanie, Thilo Bodenstein, and V. Finn Heinrich. 2012. What Makes Civil Society Strong? Testing Bottom-up and Top-down Theories of a Vibrant Civil Society. *International Political Science Review*: In Press.
- Bansal, Pratima, and Kendall Roth. 2000. Why Companies Go Green: A Model of Ecological Responsiveness. *Academy of Management Journal* 43 (4): 717–736.
- Barbieri, Katherine, Omar M. G. Keshk, and Brian M. Pollins. 2009. Trading Data: Evaluating our Assumptions and Coding Rules. *Conflict Management and Peace Science* 26 (5): 471–491.
- Barrett, Scott. 1994. Self-Enforcing International Environmental Agreements. *Oxford Economic Papers* 46 (3): 878–894.
- Barry, Brian. 1978. *Sociologists, Economists, and Democracy*. Chicago, IL: University of Chicago Press.
- Barry, Brian. 1980a. Is It Better to be Powerful or Lucky? Part 1. *Political Studies* 28 (2): 183–194.
- Barry, Brian. 1980b. Is It Better to be Powerful or Lucky? Part 2. *Political Studies* 28 (3): 338–352.

- Bättig, Michèle, and Thomas Bernauer. 2009. National Institutions and Global Public Goods: Are Democracies More Cooperative in Climate Change Policy? *International Organization* 63 (2): 281–308.
- Bättig, Michèle, Simone Brander, and Dieter M. Imboden. 2008. Measuring Countries' Cooperation within the International Climate Change Regime. *Environmental Science and Policy* 11 (6): 478–489.
- Bauer, Raymond A., Ithiel de Sola Pool, and Lewis Anthony Dexter. 1963. *American Business and Public Policy: The Politics of Foreign Trade*. New York: Atherton Press.
- Baumgartner, Frank R., and Beth L. Leech. 2001. Interest Niches and Policy Bandwagons: Patterns of Interest Group Involvement in National Politics. *Journal of Politics* 63 (4): 1191–1213.
- Baumgartner, Frank R., Jeffrey M. Berry, Marie, Hojnacki, David C. Kimball, and Beth L. Leech. 2009. *Lobbying and Policy Change: Who Wins, Who Loses, and Why*. Chicago, IL: University of Chicago Press.
- Beck, Nathaniel, and Jonathan N. Katz. 1995). What to Do (and Not to Do) with Time–Series Cross–Section Data. *American Political Science Review* 89 (3): 634–647.
- Beck, Nathaniel, Gary King, and Langche Zeng. 2000. Improving Quantitative Studies of International Conflict: A Conjecture. *American Political Science Review* 94 (1): 21–36.
- Beck, Nathaniel, Jonathan N. Katz, and Richard Tucker. 1998. Taking Time Seriously: Time–Series Cross–Section Analysis with a Binary Dependent Variable. *American Journal of Political Science* 42 (4): 1260–1288.
- Beckfield, Jason. 2003. Inequality in the World Polity: The Structure of International Organization. *American Sociological Review* 68 (3): 401–424.
- Bernauer, Thomas, and Carola Betzold. 2012. Civil Society in Global Environmental Governance. *Journal of Environment and Development* 21 (1): 62–66.
- Bernauer, Thomas, and Robert Gampfer. 2011. *Global Climate Change Policy: Can Civil Society Involvement Purchase Public Support?* ETH Zurich: Typescript.

- Bernauer, Thomas, Anna Kalbhenn, Vally Koubi, and Gabriele Spilker. 2010. A Comparison of International and Domestic Sources of Global Governance Dynamics. *British Journal of Political Science* 40 (3): 509–538.
- Bernauer, Thomas, Tobias Böhmelt, and Vally Koubi. 2013. Is There a Democracy—Civil Society Paradox in Global Environmental Governance? *Global Environmental Politics*: In Press.
- Bernauer, Thomas. 1995. The Effect of International Environmental Institutions: How We Might Learn More. *International Organization* 49 (2): 351–377.
- Bernhagen, Patrick, and Thomas Bräuninger. 2005. Structural Power and Public Policy: A Signaling Model of Business Lobbying in Democratic Capitalism. *Political Studies* 53 (3): 43–64.
- Bernhagen, Patrick. 2008. Business and International Environmental Agreements: Business Influence over Participation and Compliance. *Global Environmental Politics* 8 (1): 78–110.
- Bernhagen, Patrick. 2012. When Do Politicians Listen to Lobbyists (and Who Benefits When They Do)? *European Journal of Political Research*: In Press.
- Bernstein, Johannah, Pamela Chasek, and Langston James Goree. 1992. Prepcom IV: The Final Stop on the Road to Rio. *Earth Summit Bulletin* 1 (27): 1–8.
- Bernstein, Steven. 2005. Legitimacy in Global Environmental Governance. *Journal of International Law and International Relations* 1 (1–2): 139–166.
- Beron, Kurt J., James C. Murdoch, and Wim P.M. Vijverberg. 2003. Why Cooperate? Public Goods, Economic Power, and the Montreal Protocol. *The Review of Economics and Statistics* 85 (2): 286–297.
- Betsill, Michele M. 2006. Transnational Actors in International Environmental Politics. In: Michele M. Betsill, Kathryn Hochstetler, and Dimitris Stevis (eds). *Palgrave Advances in International Environmental Politics*. New York: Palgrave Macmillan (pp. 172–202).
- Betsill, Michele M. 2008. Reflections on the Analytical Framework and NGO Diplomacy. In: Michele M. Betsill and Elisabeth Corell (eds). *NGO Diplomacy: The Influence of Non–*

*Governmental Organizations in International Environmental Negotiations*. Cambridge, MA: MIT Press (pp. 177–206).

Betsill, Michele M., and Elisabeth Corell. 2001. NGO Influence in International Environmental Negotiations: A Framework for Analysis. *Global Environmental Politics* 1 (4): 65–85.

Betsill, Michele, and Elisabeth Corell (eds). 2008. *NGO Diplomacy: The Influence of Non-Governmental Organizations in International Environmental Negotiations*. Cambridge, MA: MIT Press.

Betsill, Michelle M. 2002. Environmental NGOs Meet the Sovereign State: The Kyoto Protocol Negotiations on Global Climate Change. *Colorado Journal of International Environmental Law and Policy* 13 (1): 49–64.

Betzold, Carola. 2010. ‘Borrowing Power’ to Influence International Negotiations: AOSIS in the Climate Change Regime, 1990–1997. *Politics* 30 (3): 131–148.

Beyers, Jan. 2004. Voice and Access: Political Practices of European Interest Associations. *European Union Politics* 5 (2): 211–240.

Biermann, Frank, and Aarti Gupta. 2011. Accountability and Legitimacy in Earth System Governance: A Research Framework. *Ecological Economics* 70 (11): 1856–1864.

Biermann, Frank, and Philipp Pattberg. 2008. Global Environmental Governance: Taking Stock, Moving Forward. *Annual Review of Environment and Resources* 33 (1): 277–294.

Binder, Seth, and Eric Neumayer. 2005. Environmental Pressure Group Strength and Air Pollution: An Empirical Analysis. *Ecological Economics* 55 (4): 527–538.

Björkbom, Lars. 1999. Negotiations over Transboundary Air Pollution: The Case of Europe. *International Negotiation* 4 (3): 389–410.

Bloodgood, Elizabeth. 2002. *Influential Information: Non-Governmental Organizations’ Use of Information in Foreign Policy-Making and International Regime Formation*. Princeton University, NJ: PhD Dissertation.

- Bloodgood, Elizabeth. 2011. The Interest Group Analogy: International Non–Governmental Advocacy Organizations in International Politics. *Review of International Studies* 37 (1): 93–120.
- Bodin, Örjan, and Christina Prell. 2011. *Social Networks and Natural Resource Management: Uncovering the Social Fabric of Environmental Governance*. Cambridge: Cambridge University Press.
- Boehmer, Charles R., Bernadette M. E. Jungblut, and Richard J. Stoll. 2011. Tradeoffs in Trade Data: Do Our Assumptions Affect Our Results? *Conflict Management and Peace Science* 28 (2): 145–167.
- Böhmelt, Tobias, and Ulrich Pilster. 2010. International Environmental Regimes – Legalization, Flexibility, and Effectiveness. *Australian Journal of Political Science* 45 (2): 245–260.
- Böhmelt, Tobias, and Ulrich Pilster. 2011. Zur Problematik kollektiven Handelns – Eine quantitative Studie internationaler Umweltregime. *Zeitschrift für Internationale Beziehungen* 18 (2): 63–90.
- Böhmelt, Tobias. 2012. *The Influence of Civil Society Lobbying on Countries' Cooperation in Climate Change Policy – A Matching Approach*. ETH Zurich: Typescript.
- Böhmelt, Tobias. 2013. A Closer Look at the Information Provision Rationale: Civil Society Participation in States' Delegations at the UNFCCC. *Review of International Organizations: Forthcoming*.
- Bonacich, Phillip. 1987. Power and Centrality: A Family of Measures. *American Sociological Review* 92 (4): 1170–1182.
- Borgatti, Stephen P., Ajay Mehra, Daniel J. Brass, and Giuseppe Labianca. 2009. Network Analysis in the Social Sciences. *Science* 323 (5916): 892–895.
- Bouwen, Pieter. 2004. Exchanging Access Goods for Access: A Comparative Study of Business Lobbying in the European Union Institutions. *European Journal of Political Research* 43 (3): 337–369.

- Bouwen, Pieter. 2009. The European Commission. In: David Coen and Jeremy Richardson (eds). *Lobbying in the European Union: Institutions, Actors, and Issues*. Oxford: Oxford University Press.
- Bowden, Brett. 2006. Civil Society, the State, and the Limits to Global Civil Society. *Global Society* 20 (2): 155–178
- Box–Steffensmeier, Janet M., and Bradford S. Jones. 2004. *Event History Modeling: A Guide for Social Scientists*. Cambridge: Cambridge University Press.
- Box–Steffensmeier, Janet M., and Christopher J. W. Zorn. 2001. Duration Models and Proportional Hazards in Political Science. *American Journal of Political Science* 45 (2): 972–988.
- Box–Steffensmeier, Janet M., Dan Reiter, and Christopher J. W. Zorn. 2003. Nonproportional Hazards and Event History Analysis in International Relations. *Journal of Conflict Resolution* 47 (1): 33–53.
- Brambor, Thomas, William R. Clark, and Matt Golder. 2006. Understanding Interaction Models: Improving Empirical Analysis. *Political Analysis* 14 (1): 63–82.
- Bratberg, Espen, Sigve Tjøtta, and Torgeir Øines. 2005. Do Voluntary International Environmental Agreements Work? *Journal of Environmental Economics and Management* 50 (3): 583–597.
- Bratton, Michael. 1990. NGOs in Africa: Can They Influence Public Policy? *Development and Change* 21 (1): 87–118.
- Braumoeller, Bear F. 2004. Hypothesis Testing and Multiplicative Interaction Terms. *International Organization* 58 (3): 807–820.
- Breitmeier, Helmut, Arild Underdal, and Oran R. Young. 2011. The Effectiveness of International Environmental Regimes: Comparing and Contrasting Findings from Quantitative Research. *International Studies Review* 13 (4): 579–728.
- Breitmeier, Helmut, Marc A. Levy, Oran R. Young, and Michael Zürn. 1996. *IIASA International Regimes Database – Data Protocol*. Laxenburg: IIASA Working Paper W–96–159.

- Breitmeier, Helmut, Oran R. Young, and Michael Zürn. 2006. *Analyzing International Environmental Regimes: From Case Study to Database*. Cambridge, MA: MIT Press.
- Bronars, Stephen G., and John R. Lott. 1997. Do Campaign Donations Alter How a Politician Votes? Or, Do Donors Support Candidates Who Value the Same Things That They Do? *Journal of Law and Economics* 40 (2): 317–350.
- Broscheid, Andreas, and David Coen. 2003. Insider and Outsider Lobbying of the European Commission: An Informational Model of Forum Politics. *European Union Politics* 4 (2): 165–189.
- Buchanan, James M., and Gordon Tullock. 1962. *The Calculus of Consent: Logical Foundations of Constitutional Democracy*. Ann Arbor, MI: University of Michigan Press.
- Bueno de Mesquita, Bruce, Alastair Smith, Randolph M. Siverson, and James D. Morrow. 2003. *The Logic of Political Survival*. Cambridge, MA: MIT Press.
- Bueno de Mesquita, Bruce, James D. Morrow, Randolph M. Siverson, and Alastair Smith. 1999. An Institutional Explanation of the Democratic Peace. *American Political Science Review* 93 (4): 791–807.
- Burck, Jan, and Christoph Bals. 2011. *The Climate Change Performance Index – Background and Methodology*. Berlin/Brussels: Germanwatch and CAN Europe.
- Burstein, Paul, and Elizabeth C. Hirsh. 2007. Interest Organizations, Information, and Policy Innovation in the U.S. Congress. *Sociological Forum* 22 (2): 174–199.
- Cao, Xun, and Aseem Prakash. 2010. Trade Competition and Domestic Pollution: A Panel Study, 1980–2003. *International Organization* 64 (3): 481–503.
- Cao, Xun, and Aseem Prakash. 2011. Growing Exports by Signaling Product Quality: Trade Competition and the Cross–National Diffusion of ISO 9000 Quality Standards. *Journal of Policy Analysis and Management* 30 (1): 111–135.
- Cao, Xun, and Aseem Prakash. 2012. Trade Competition and Environmental Regulations: Domestic Political Constraints and Issue Visibility. *Journal of Politics* 74 (1): 66–82.



- Cao, Xun. 2009. Networks of Intergovernmental Organizations and Convergence in Domestic Economic Policies. *International Studies Quarterly* 53 (4): 1095–1130.
- Cao, Xun. 2010. Networks as Channels of Policy Diffusion: Explaining Worldwide Changes in Capital Taxation, 1998–2006. *International Studies Quarterly* 54 (3): 823–854.
- Carpenter, Chad. 2001. Businesses, Green Groups, and the Media: The Role of Non-Governmental Organizations in the Climate Change Debate. *International Affairs* 77 (2): 313–328.
- Castiglione, Dario. 1998. Civil Society. In: Peter Newman (ed). *The New Palgrave Dictionary of Law and Economics*. New York: Palgrave Macmillan (pp. 250–267).
- Chamberlain, John. 1974. Provision of Collective Goods as a Function of Group Size. *American Political Science Review* 68 (2): 707–716.
- Chambers, Simone, and Jeffrey Kopstein. 2006. Civil Society and the State. In: John S. Dryzek, Bonnie Honig, and Anne Philips (eds). *The Oxford Handbook of Political Theory*. Oxford: Oxford University Press (pp. 363–381).
- Charnovitz, Steve. 1997. Two Centuries of Participation: NGOs and International Governance. *Michigan Journal of International Law* 18 (2): 183–286.
- Chasek, Pamela S. 2001. NGOs and State Capacity in International Environmental Negotiations: The Experience of the Environmental Negotiations Bulletin. *Review of European Community and International Environmental Law* 10 (2): 168–176.
- Chayes, Abram, and Antonia H. Chayes. 1993. On Compliance. *International Organization* 47 (1): 175–205.
- Christiansen, Peter Munk, Asbjørn Sonne Nørgaard, Hilmar Rommetvedt, Torsten Svensson, Gunnar Thesen, and PerOla Öberg. 2010. *Varieties of Democracy: Interest Groups and Corporatist Committees in Scandinavian Policy Making*. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations* 21 (1): 22–40.

- Clark, Ann Marie, Elisabeth J. Friedman, and Kathryn Hochstetler. 1998. The Sovereign Limits of Global Civil Society: A Comparison of NGO Participation in the UN World Conference on the Environment, Human Rights, and Women. *World Politics* 51 (1): 1–35.
- Clark, John. 1995. The State, Popular Participation, and the Voluntary Sector. *World Development* 23 (4): 593–601.
- Clarke, Kevin A. 2005. The Phantom Menace: Omitted Variable Bias in Econometric Research. *Conflict Management and Peace Science* 22 (4): 341–352.
- Cohen, Jacob. 1960. A Coefficient of Agreement for Nominal Scales. *Educational and Psychological Measurement* 20 (1): 37–46.
- Coleman, James. 1990. *Foundations of Social Theory*. Cambridge, MA: Harvard University Press.
- Congleton, Roger D. 1992. Political Institutions and Pollution Control. *Review of Economics and Statistics* 74 (3): 412–421.
- Copeland, Brian. R., and M. Scott Taylor. 2003. *Trade and the Environment: Theory and Evidence*. Princeton, NJ: Princeton University Press.
- Corell, Elisabeth, and Michele M. Betsill. 2001. A Comparative Look at NGO Influence in International Environmental Negotiations: Desertification and Climate Change. *Global Environmental Politics* 1 (4): 86–106.
- Corell, Elisabeth. 2008. NGO Influence in the Negotiations of the Desertification Convention. In: Michelle M. Betsill and Elisabeth Corell (eds). *NGO Diplomacy: The Influence of Non-Governmental Organizations in International Environmental Negotiations*. Cambridge, MA: MIT Press (pp. 101–118).
- Crawford, Vicent P, and Joel Sobel. 1982. Strategic Information Transmission. *Econometrica*, 50 (6): 1431–1451.
- Crombez, Christophe. 2002. Information, Lobbying, and the Legislative Process in the European Union. *European Union Politics* 3 (1): 7–32.

- Cropper, Maureen L., William N. Evans, Stephen J. Berard, Maria M. Ducla-Soares, and Paul R. Portney. 1992. The Determinants of Pesticide Regulation: A Statistical Analysis of EPA Decision-Making. *Journal of Political Economy* 100 (1): 175–198.
- Crouchley, Robert. 1995. A Random-Effects Model for Ordered Categorical Data. *Journal of the American Statistical Association* 90 (430): 489–498.
- Dahl, Robert A. 1956. *A Preface to Democratic Theory*. Chicago, IL: Chicago University Press.
- Dalton, Russell J. 2005. The Greening of the Globe? Cross-National Levels of Environmental Group Membership. *Environmental Politics* 14 (4): 441–459.
- DeSombre, Elizabeth R. 2001. The Experience of the Montreal Protocol: Particularly Remarkable and Remarkably Particular. *UCLA Journal of Environmental Law and Policy* 19 (1): 49–81.
- Diamond, Alexis, and Jasjeet S. Sekhon. 2012. Genetic Matching for Estimating Causal Effects: A General Multivariate Matching Method for Achieving Balance in Observational Studies. *Review of Economics and Statistics*: In Press.
- Diamond, Larry. 1994. Rethinking Civil Society – Toward Democratic Consolidation. *Journal of Democracy* 5 (3): 4–17.
- Dimitrov, Radoslav S. 2010. Inside UN Climate Change Negotiations: The Copenhagen Conference. *Review of Policy Research* 27 (6): 795–821.
- Dombrowski, Kathrin. 2010. Filling the Gap? An Analysis of Nongovernmental Organizations Responses to Participation and Representation Deficits in Global Climate Governance. *International Environmental Agreements* 10 (4): 397–416.
- Dorussen, Han, and Hugh Ward. 2008. Intergovernmental Organizations and the Kantian Peace – A Network Perspective. *Journal of Conflict Resolution* 52 (2): 189–212.
- Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper.
- Downs, George W. 2000. Constructing Effective Environmental Regimes. *Annual Review of Political Science* 3 (1): 25–42.
- Downs, George W., David M. Rocke, and Peter N. Barsoom. 1996. Is the Good News About Compliance Good News About Cooperation? *International Organization* 50 (3): 379–406.

- Dryzek, John S. 2000. *Deliberative Democracy and Beyond*. Oxford: Oxford University Press.
- Dryzek, John S. 2012. Global Civil Society: The Progress of Post–Westphalian Politics. *Annual Review of Political Science* 15 (1): 1–19.
- Dür, Andreas, and Dirk De Bièvre. 2007. The Question of Interest Group Influence. *Journal of Public Policy* 27 (1): 1–12.
- Dür, Andreas. 2008. Interest Groups in the European Union: How Powerful Are They? *West European Politics* 31 (6): 1212–1230.
- Durden, Garey C., Jason F. Shogren, and Jonathan I. Silberman. 1991. The Effects of Interest Groups Pressure on Coal–Strip Mining Legislation. *Social Science Quarterly* 72 (2): 239–250.
- Edwards, Michael. 1998. Are NGOs Overrated? Why and How to Say No. *Current Issues in Comparative Education* 1 (1): 55–61.
- Edwards, Michael. 2004. *Civil Society*. Cambridge: Polity Press.
- Efron, Bradley. 1983. Estimating the Error Rate of a Prediction Rule: Improvement on Cross–Validation. *Journal of the American Statistical Association* 78 (382): 316–331.
- Eising, Rainer. 2007. Institutional Context, Organizational Resources, and Strategic Choices: Explaining Interest Group Access in the European Union. *European Union Politics* 8 (3): 329–362.
- EMEP. 2008a. *Inventory Review. Emission Data Reported Under the LRTAP Convention and the NEC Directive*. Technical Report: EMEP.
- EMEP. 2008b. *Transboundary Acidification, Euthrophication, and Ground–Level Ozone in Europe in 2006*. Status Report 2008: EMEP.
- Esterling, Kevin M. 2004. *The Political Economy of Expertise*. Ann Arbor, MI: University of Michigan Press.
- Europa Publications. 1994. *The Environment Encyclopedia and Directory. 1<sup>st</sup> Edition*. London: Europa Publications Limited.
- Europa Publications. 1997. *The Environment Encyclopedia and Directory. 2<sup>nd</sup> Edition*. London: Europa Publications Limited.

- Europa Publications. 2001. *The Environment Encyclopedia and Directory*. 3<sup>rd</sup> Edition. London: Europa Publications Limited.
- Falkner, Robert. 2005. The Business of Ozone Layer Protection: Corporate Power in Regime Evolution. In David L. Levy and Peter J. Newell (eds). *The Business of Global Environmental Governance*. Cambridge, MA: MIT Press (pp. 105–234).
- Farrington, John, and Anthony Bebbington. 1993. *Reluctant Partners? Non-Governmental Organizations, the State, and Sustainable Agricultural Development*. London: Routledge.
- Fawcett, Tom. 2006. An Introduction to ROC Analysis. *Pattern Recognition Letters* 27 (8): 861–874.
- Fearon, James D. 1995. Rationalist Explanations for War. *International Organization* 49 (3): 379–414.
- Finger, Matthias. 1994. NGOs and Transformation: Beyond Social Movement Theory. In: Thomas Princen and Matthias Finger (eds). *Environmental NGOs in World Politics: Linking the Local and the Global*. London: Routledge (pp. 48–68).
- Finnemore, Martha, and Kathryn Sikkink. 1998. International Norm Dynamics and Political Change. *International Organization* 52 (4): 887–917.
- Finus, Michael, and Sigve Tjøtta. 2003. The Oslo Protocol on Sulfur Reduction: The Great Leap Forward? *Journal of Public Economics* 87 (9–10): 2031–2048.
- Fisher, Dana R. 2010. COP–15 in Copenhagen: How the Merging of Movements Left Civil Society Out in the Cold. *Global Environmental Politics* 10 (2): 11–17.
- Fisher, Dana R. 2011. The Limits of Civil Society’s Participation and Influence at COP–15: A Comment on ‘Disenfranchisement of Countries and Civil Society at COP–15 in Copenhagen’ by Ian McGregor. *Global Environmental Politics* 11 (1): 8–11.
- Fisher, Dana R., and Jessica F. Green. 2004. Understanding Disenfranchisement: Civil Society and Developing Countries’ Influence and Participation in Global Governance for Sustainable Development. *Global Environmental Politics* 4 (3): 65–84.

- Ford, Lester R., and Delbert R. Fulkerson. 1956. Maximal Flow through a Network. *Canadian Journal of Mathematics* 8 (5): 399–404.
- Fowler, Linda L., and Ronald G. Shaiko. 1987. The Grass Roots Connection: Environmental Activists and Senate Roll Calls. *American Journal of Political Science* 31 (3): 484–510.
- Fox, Jonathan A., and L. David Brown (eds). 1998. *The Struggle for Accountability: The World Bank, NGOs, and Grassroots Movements*. Cambridge, MA: The MIT Press.
- Frank, David J. 1999. The Social Bases of Environmental Treaty Ratification, 1900–1990. *Sociological Inquire* 69 (4): 523–555.
- Franzese, Robert J., and Jude C. Hays. 2007. Spatial Econometric Models of Cross–Sectional Interdependence in Political Science Panel and Time–Series–Cross–Section Data. *Political Analysis* 15 (2): 140–164.
- Fredriksson, Per G., and Gergely Ujhelyi. 2006. *Political Institutions, Interest Groups, and the Ratification of International Environmental Agreements*. Department of Economics: University of Houston, TX: Unpublished Manuscript.
- Fredriksson, Per G., and Noel Gaston. 2000. Ratification of the 1992 Climate Change Convention: What Determines Legislative Delay? *Public Choice* 104 (3/4): 345–368.
- Fredriksson, Per G., Erik Neumayer, and Gergely Ujhelyi. 2007. Kyoto Protocol Cooperation: Does Government Corruption Facilitate Environmental Lobbying? *Public Choice* 133 (1/2): 231–251.
- Fredriksson, Per G., Erik Neumayer, Richard Damania, and Scott Gates. 2005. Environmentalism, Democracy, and Pollution Control. *Journal of Environmental Economics and Management* 49 (2): 343–365.
- Freeman, Linton C., Stephen P. Borgatti, and Douglas R. White. 1991. Centrality in Valued Graphs: A Measure of Betweenness based on Network Flow. *Social Networks* 13 (2): 141–154.

- Friedman, Elisabeth J., Kathryn Hochstetler, and Ann Marie Clark. 2005. *Sovereignty, Democracy, and Global Civil Society: State–Society Relations at UN World Conferences*. Albany, NY: State University of New York Press.
- Frohlich, Norman, and Joe A. Oppenheimer. 1970. I Get by With a Little Help from my Friends. *World Politics* 23 (1): 104–120.
- Gemmill, Barbara, and Abimbola Bamidele–Izu. 2002. The Role of NGOs and Civil Society in Global Environmental Governance. In: Daniel C. Esty and Maria H. Ivanova (eds). *Global Environmental Governance: Options and Opportunities*. New Haven, CT: Yale School of Forestry and Environmental Studies (pp. 77–100).
- Gerdung, Anja. 2004. Global Environmental Governance and the Role of Civil Society Groups. *New Zealand Journal of Environmental Law* 8 (1): 55–98.
- Gilligan, Michael J., and Ernest J. Sergenti. 2008. Do UN Interventions Cause Peace? Using Matching to Improve Causal Inference. *Quarterly Journal of Political Science* 3 (2): 89–122.
- Gilpin, Robert. 2001. *Global Political Economy: Understanding the International Economic Order*. Princeton, NJ: Princeton University Press.
- Gleditsch, Kristian S. 2002. Expanded Trade and GDP Data. *Journal of Conflict Resolution* 46 (5): 712–724.
- Gleditsch, Kristian S. 2008. *Modified Polity P4 and P4D Data, Version 3.0*. Accessed at: <http://privatewww.essex.ac.uk/~ksg/Polity.html>.
- Gordenker, Leon, and Thomas G. Weiss. 1995. Pluralizing Global Governance: Analytical Approaches and Dimensions. *Third World Quarterly* 16 (3): 357–388.
- Gough, Clair, and Simon Shackley. 2001. The Respectable Politics of Climate Change: The Epistemic Communities and NGOs. *International Affairs* 77 (2): 329–345.
- Granovetter, Mark. 1985. Economic Action and Social Structure: The Problem of Embeddedness. *American Journal of Sociology* 91 (3): 481–510.
- Grant, Ruth W., and Robert O. Keohane. 2005. Accountability and Abuses of Power in World Politics. *American Political Science Review* 99 (1): 29–43.

- Greene, William. 2004. The Behavior of the Maximum–Likelihood Estimator of Limited Dependent Variable Models in the Presence of Fixed Effects. *Econometrics Journal* 7 (1): 98–119.
- Grigorescu, Alexandru. 2007. Transparency of Intergovernmental Organizations: The Roles of Member States, International Bureaucracies, and Non–Governmental Organizations. *International Studies Quarterly* 51 (3): 625–648.
- Grossman, Gene M., and Alan B. Krueger. 1995. Economic Growth and the Environment. *Quarterly Journal of Economics* 110 (2): 353–377.
- Grundig, Frank, and Hugh Ward. 2008. *Why Hegemons Do Not Always Get Their Way: The Supply of Public Goods and Leadership Competition*. University of Essex: Typescript.
- Gulbrandsen, Lars H., and Steinar Andresen. 2004. NGO Influence in the Implementation of the Kyoto Protocol: Compliance, Flexibility Mechanisms, and Sinks. *Global Environmental Politics* 4 (4): 54–75.
- Gulbrandsen, Lars H. 2008. The Role of Science in Environmental Governance: Competing Knowledge Producers in Swedish and Norwegian Forestry. *Global Environmental Politics* 8 (2): 99–122.
- Haas, Peter M. 1993. Epistemic Communities and the Dynamics of International Environmental Cooperation. In: Volker Rittberger (ed). *Regime Theory and International Relations*. Oxford: Oxford University Press (pp. 168–201).
- Haas, Peter M. 1997. Scientific Communities and Multiple Paths to Environmental Management. In: L. Anathe Brooks, and Stacy D. VanDeVeer (eds). *Saving the Seas: Values, Scientists, and International Governance*. Maryland Sea Grant College, MD (pp. 193–228).
- Habeb, William M. 1988. *Power and Tactics in International Negotiations: How Weak Nations Bargain with Strong Nations*. Baltimore, MD: Johns Hopkins University Press.
- Hafner–Burton, Emilie, and Alexander Montgomery. 2006. Power Positions–International Organizations, Social Networks, and Conflict. *Journal of Conflict Resolution* 50 (1): 3–27.



- Hafner–Burton, Emilie, Jana von Stein, and Erik Gartzke. 2008. International Organizations Count. *Journal of Conflict Resolution* 52 (2): 175–188.
- Hafner–Burton, Emilie, Miles Kahler, and, Alexander Montgomery. 2009. Network Analysis for International Relations. *International Organization* 63 (3): 559–592.
- Hall, Richard. L., and Alan V. Deardorff. 2006. Lobbying as Legislative Subsidy. *American Political Science Review* 100 (1): 69–84.
- Haller, Max, Roger Jowell, and Tom W. Smith (eds). 2009. *Charting the Globe: The International Social Survey Program, 1984–2009*. London: Routledge.
- Hansen, John M. 1991. *Gaining Access: Congress and the Farm Lobby, 1919–1981*. Chicago, IL: Chicago University Press.
- Hawkins, Darren G., David Lake, Daniel L. Nielson, and Michael J. Tierney. 2006. Delegation under Anarchy: States, International Organizations, and Principal–Agent Theory. In: Darren G. Hawkins, David Lake, Daniel L. Nielson, and Michael J. Tierney (eds). *Delegation and Agency in International Organizations*. Cambridge: Cambridge University Press (pp. 3–38).
- Helm, Carsten, and Detlef F. Sprinz. 2000. Measuring the Effectiveness of International Environmental Regimes. *Journal of Conflict Resolution* 44 (5): 630–652.
- Hendrix, Cullen. 2010. Measuring State Capacity: Theoretical and Empirical Implications for the Study of Civil Conflict. *Journal of Peace Research* 47 (3): 273–285.
- Henisz, Witold J. 2002. The Institutional Environment for Infrastructure Investment. *Industrial and Corporate Change* 11 (2): 355–389.
- Hirshleifer, Jack. 1983. From Weakest–Link to Best–Shot: The Voluntary Provision of Public Goods. *Public Choice* 41 (3): 371–386.
- Hirshleifer, Jack. 1985. From Weakest–Link to Best–Shot: Correction. *Public Choice* 46 (2): 221–223.
- Ho, Daniel E., Kosuke Imai, Garry King, Elizabeth A. Stuart. 2007. Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference. *Political Analysis* 15 (3): 199–236.

- Hochstetler, Kathryn, Ann Marie Clark, and Elisabeth J. Friedman. 2000. Sovereignty in the Balance: Claims and Bargains at the UN Conferences on the Environment, Human Rights, and Women. *International Studies Quarterly* 44 (4): 591–614.
- Holmberg, Sören, Bo Rothstein, and Naghmeh Nasiritousi. 2009. Quality of Government: What You Get. *Annual Review of Political Science* 12 (1): 135–161.
- Honaker, James, and Gary King. 2010. What to do About Missing Values in Time–Series Cross–Section Data. *American Journal of Political Science* 54 (2): 561–581.
- Hovi, Jon, Detlef F. Sprinz, and Arild Underdal. 2003. The Oslo–Potsdam Solution to Measuring Regime Effectiveness: Critique, Response, and the Road Ahead. *Global Environmental Politics* 3 (3): 74–96.
- Howell, Llewellyn D. 2011. *International Country Risk Guide Methodology*. East Syracuse, NY: The PRS Group.
- Johnson, Erica, and Aseem Prakash. 2007. NGO Research Program: A Collective Action Perspective. *Policy Sciences* 40 (3): 221–240.
- Jordan, Grant, Darren Halpin, and William Maloney. 2004. Defining Interests: Disambiguation and the Need for New Directions. *British Journal of Politics and International Relations* 6 (2): 195–212.
- Kalt, Joseph P., and Mark A. Zupan. 1984. Capture and Ideology in the Economic Theory of Politics. *American Economic Review* 74 (3): 279–300.
- Kau, James B., and Paul H. Rubin. 1982. *Congressmen, Constituents, and Contributors*. Boston, MA: Martinus Nijhoff Publishing.
- Keane, John. 2003. *Global Civil Society?* Cambridge: Cambridge University Press
- Keck, Margaret E., and Kathryn Sikkink. 1998. *Activists beyond Borders. Advocacy Networks in International Politics*. Ithaca, NY: Cornell University Press.
- Kennan, John, and Robert Wilson. 1993. Bargaining with Private Information. *Journal of Economic Literature* 31 (1): 45–104.

- Keohane, Robert. 1984. *After Hegemony – Cooperation and Discord in the World Political Economy*. Princeton, NJ: Princeton University Press.
- King, Gary, Robert Keohane, and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton, NJ: Princeton University Press.
- King, Gary, and Langche Zeng. 2001a. Logistic Regression in Rare Events Data. *Political Analysis* 9 (2): 137–163.
- King, Gary, and Langche Zeng. 2001b. Explaining Rare Events in International Relations. *International Organization* 55 (3): 693–715.
- King, Gary, and Langche Zeng. 2007. When Can History Be Our Guide? The Pitfalls of Counterfactual Inference. *International Studies Quarterly* 51 (1): 183–210.
- King, Gary, Michael Tomz, and Jason Wittenberg. 2000. Making the Most of Statistical Analyses: Improving Interpretation and Presentation. *American Journal of Political Science* 44 (2): 347–361.
- Kingsbury, Benedict. 2007. Global Environmental Governance as Administration: Implications for International Law. In: Daniel Bodansky, Jutta Brunnée, and Ellen Hey (eds). *Oxford Handbook of International Environmental Law*. Oxford: Oxford University Press (pp. 63–84).
- Klüver, Heike. 2011. The Contextual Nature of Lobbying: Explaining Lobbying Success in the European Union. *European Union Politics* 12 (4): 483–506.
- Klüver, Heike. 2012. Informational Lobbying in the European Union: The Effect of Organizational Characteristics. *West European Politics* 35 (3): 490–510.
- Krasner, Stephen. 1983. Structural Causes and Regime Consequences: Regimes as Intervening Variables. In: Stephen Krasner (ed). *International Regimes*. Cornell, NY: Cornell University Press (pp. 1–22).
- Laakso, Markku, and Rein Taagepera. 1979. ‘Effective’ Number of Parties: A Measure with Application to West Europe. *Comparative Political Studies* 12 (1): 3–27.
- Lake, David, and Matthew Baum. 2001. The Invisible Hand of Democracy: Political Control and the Provision of Public Service. *Comparative Political Studies* 34 (6): 587–621.

- Lateef, Sarwar K. 1992. *Governance and Development*. Washington, DC: World Bank.
- Lehmbruch, Gerhard. 1979. Liberal Corporatism and Party Government. In: Phillipe C. Schmitter and Gerhard Lehmbruch (eds). *Trends Towards Corporatist Intermediation*. London: Sage (pp. 53–61).
- Leifeld, Philip, and Volker Schneider. 2012. Information Exchange in Policy Networks. *American Journal of Political Science*: In Press.
- Levy, David L. 2005. Business and the Evolution of Climate Regimes: The Dynamics of Corporate Strategies. In: David L. Levy and Peter J. Newell (eds). *The Business of Global Environmental Governance*. Cambridge, MA: MIT Press (pp. 73–104).
- Levy, Marc A. 1993. European Acid Rain: The Power of Tote–Board Diplomacy. In: Peter M. Haas, Robert Keohane, and Marc A. Levy (eds). *Institutions for the Earth*. Cambridge, MA: MIT Press (pp. 75–133).
- Lidskog, Rolf, and Göran Sundqvist. 2002. The Role of Science in Environmental Regimes: The Case of the LRTAP. *European Journal of International Relations* 8 (1): 77–101.
- Lipschutz, Ronnie D. 1992. Reconstructing World Politics: The Emergence of Global Civil Society. *Millennium: Journal of International Studies* 21 (3): 389–420.
- Lipset, Seymour M. 1983. *Political Man: The Social Bases of Politics*. London: Heinemann.
- Ljiphart, Arend. 1999. *Patterns of Democracy: Government Forms and Performance in Thirty–Six Countries*. New Haven, CT: Yale University Press.
- Lohmann, Susanne. 1995. Information, Access, and Contributions: A Signaling Model of Lobbying. *Public Choice* 85 (3–4): 267–284.
- Lohmann, Susanne. 1998. An Information Rationale for the Power of Special Interests. *American Political Science Review* 92 (4): 809–827.
- Long, J. Scott. 1997. *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: Sage.
- Mahoney, Christine. 2009. *Brussels versus the Beltway. Advocacy in the United States and the European Union*. Washington, DC: Georgetown University Press.

- Maoz, Zeev. 2010. *Networks of Nations: The Evolution, Structure, and Impact of International Networks, 1816–2001*. Cambridge: Cambridge University Press.
- Marshall, Monty G., and Keith Jagers. 2004. *Polity IV Project: Political Regime Characteristics and Transitions 1800–2004, Dataset Users' Manual*. Colorado State University, CO: Center for Global Policy School of Public Policy.
- Mason, Michael R. 2008. The Governance of Transnational Environmental Harm: Addressing New Modes of Accountability/Responsibility. *Global Environmental Politics* 8 (3): 8–24.
- Mathews, Jessica T. 1997. Power Shift. *Foreign Affairs* 76 (1): 50–66.
- Mawlawi, Farouk. 1993. New Conflicts, New Challenges: The Evolving Role for Non-Governmental Actors. *Journal of International Affairs* 46 (2): 391–413.
- Mayer, Peter, Volker Rittberger, and Michael Zürn. 1993. Regime Theory: State of the Art and Perspectives. In: Volker Rittberger (ed). *Regime Theory and International Relations*. Oxford: Oxford University Press (pp. 391–430).
- McGregor, Ian M. 2011. Disenfranchisement of Countries and Civil Society at COP–15 in Copenhagen. *Global Environmental Politics* 11 (1): 1–7.
- McGuire, Martin, and Mancur Olson. 1996. The Economics of Autocracy and Majority Rule: The Invisible Hand and the Use of Force. *Journal of Economic Literature* 34 (2): 72–96.
- Mendelsohn, Robert, Ariel Dinar, and Larry Williams. 2006. The Distributional Impact of Climate Change on Rich and Poor Countries. *Environment and Development Economics* 11 (2): 159–178.
- Miles, Edward L., Arild Underdal, Steinar Andresen, Jørgen Wettestad, Jon Birger Skaereth, and Elaine M. Carlin (eds). 2002. *Environmental Regime Effectiveness*. Cambridge MA: MIT Press.
- Mitchell, Ronald B. 2002. A Quantitative Approach to Evaluating International Environmental Regimes. *Global Environmental Politics* 2 (4): 58–83.
- Mitchell, Ronald B. 2003. International Environmental Agreements: A Survey of Their Features, Formation, and Effects. *Annual Review of Environment and Resources* 28 (1): 249–261.

- Mitchell, Ronald B. 2006. Part Two: The Effectiveness of International Environmental Regimes – Problem Structure, Institutional Design, and the Relative Effectiveness of International Environmental Agreements. *Global Environmental Politics* 6 (3): 72–89.
- Mitchell, Ronald B. 2006. Problem Structure, Institutional Design, and the Relative Effectiveness of International Environmental Agreements. *Global Environmental Politics* 6 (3): 72–89.
- Mitchell, Ronald B. 2008. Evaluating the Performance of Environmental Institutions: What to Evaluate and How to Evaluate It? In: Oran R. Young, Heike Schroeder, and Leslie A. King (eds). *Institutions and Environmental Change: Principal Findings, Applications, and Research Frontiers*. Cambridge, MA: MIT Press (pp. 79–114).
- Moravcsik, Andrew. 1997. Taking Preferences Seriously: A Liberal Theory of International Politics. *International Organizations* 51 (4): 513–553.
- Morgan, Stephen Lawrence, and Christopher Winship. 2007. *Counterfactuals and Causal Inference: Methods and Principles for Social Research*. Cambridge: Cambridge University Press.
- Munton, Don, Marvin Soroos, Elena Nikitina, and Marc A. Levy. 1999. Acid Rain in Europe and North America. In: Oran R. Young (ed). *The Effectiveness of International Environmental Regimes*. Cambridge, MA: MIT Press (pp. 155–249).
- Murdoch, James C., Todd Sandler, and Keith Sargent. 1997. A Tale of Two Collectives: Sulfur and Nitrogen Oxides Emission Reduction in Europe. *Economica* 64 (254): 281–301.
- Murdoch, James C., Todd Sandler, and Wim P. Vijverberg, 2003. The Participation Decision versus the Level of Participation in an Environmental Treaty: A Spatial Probit Analysis. *Journal of Public Economics* 87 (2): 337–362.
- Neumayer, Eric. 2002a. Do Democracies Exhibit Stronger International Environmental Commitment? A Cross–Country Analysis. *Journal of Peace Research* 39 (2): 139–164.
- Neumayer, Eric. 2002b. Does Trade Openness Promote Multilateral Environmental Cooperation? *World Economy* 25 (6): 815–32.

- Newell, Peter. 2000. *Climate for Change: Non-State Actors and the Global Politics of the Greenhouse*. Cambridge: Cambridge University Press.
- Niskanen, William. 1997. Autocratic, Democratic, and Optimal Government. *Economic Inquire* 35 (3): 464–479.
- North, Douglass. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.
- Nye, Joseph. 2001. Globalization's Democratic Deficit: How to Make International Institutions More Accountable. *Foreign Affairs* 80 (2): 2–6.
- Oberthür, Sebastian, Matthias Buck, Sebastian Muller, Stefanie Pfahl, Richard G. Tarasofsky, Jacob Werksman, and Alice Palmer. 2002. *Participation of Non-Governmental Organizations in International Environmental Governance: Legal Basis and Practical Experience*. Berlin: Ecologic.
- Olson, Mancur. 1965. *The Logic of Collective Action – Public Goods and the Theory of Groups*. Cambridge, MA: Harvard University Press.
- Olson, Mancur. 1993. Dictatorship, Democracy, and Development. *American Political Science Review* 87 (3): 567–576.
- Omelicheva, Mariya Y. 2009. Global Civil Society and Democratization of World Politics: A Bona Fide Relationship or Illusory Liaison? *International Studies Review* 11 (1): 109–132.
- Page, Benjamin I., and Robert Y. Shapiro. 1983. Effects of Public Opinion on Policy. *American Political Science Review* 77 (1): 175–190.
- Paterson, Matthew. 1996. *Global Warming and Global Politics*. London: Routledge.
- Payne, Roger A. 1995. Freedom and the Environment. *Journal of Democracy* 6 (3): 41–55.
- Perrin, Sophie, and Thomas Bernauer. 2010. International Regime Formation Revisited: Explaining Ratification Behavior with Respect to Long Range Transboundary Air Pollution Agreements. *European Union Politics* 11 (3): 405–426.
- Pevhouse, Jon C., Timothy Nordstrom, and Kevin Warnke. 2004. The COW-2 International Organizations Dataset Version 2.0. *Conflict Management and Peace Science* 21 (2): 101–119.

- Pfetsch, Frank R., and Alice Landau. 2000. Symmetry and Asymmetry in International Negotiations. *International Negotiation* 5 (1): 21–42.
- Plümper, Thomas, and Vera E. Troeger. 2007. Efficient Estimation of Time-Invariant and Rarely Changing Variables in Finite Sample Panel Analyses with Unit Fixed Effects. *Political Analysis* 15 (2): 124–139.
- Popper, Karl. 1959. *The Logic of Scientific Discovery*. New York: Basic Books.
- Porter, Michael E., and Claas van der Linde. 1995. Toward a New Conception of the Environment Competitiveness Relationship. *Journal of Economic Perspectives* 9 (4): 97–118.
- Potters, Jan, and Frans van Winden. 1992. Lobbying and Asymmetric Information. *Public Choice* 74 (3): 269–292.
- Powell, Robert. 1999. *In the Shadow of Power: States and Strategies in International Politics*. Princeton, NJ: Princeton University Press.
- Pretty, Jules, and Hugh Ward. 2000. Social Capital and the Environment. *World Development* 29 (2): 209–227.
- Princen, Thomas. 1994. NGOs: Creating a Niche in Environmental Diplomacy. In: Thomas Princen and Matthias Finger (eds). *Environmental NGOs in World Politics: Linking the Local and the Global*. London: Routledge (pp. 29–47).
- Putnam, Robert D. 1988. Diplomacy and Domestic Politics: The Logic of Two-Level Games. *International Organization* 42 (3): 427–460.
- Putnam, Robert D. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon and Schuster.
- Rahman, Atiq, and Annie Roncerel. 1994. A View from the Ground Up. In: Irving M. Mintzer and Amber J. Leonard (eds). *Negotiating Climate Change: The Inside Story of the Rio Convention*. Cambridge: Cambridge University Press (pp. 239–273).
- Raustiala, Kal. 2001. Non-State Actors in the Global Climate Regime. In: Urs Luterbacher and Detlef F. Sprinz (eds). *International Relations and Global Climate Change*. Cambridge, MA: MIT Press (pp. 95–117).



- Raustiala, Kal. 1997. States, NGOs, and International Environmental Institutions. *International Studies Quarterly* 41 (4): 719–740.
- Regan, Patrick, and Allan C. Stam. 2000. In the Nick of Time: Conflict Management, Mediation Timing, and the Duration of Interstate Disputes. *International Studies Quarterly* 44 (2): 239–260.
- Reiche, Danyel. 2010. Energy Policies of Gulf Cooperation Council (GCC) Countries – Possibilities and Limitations of Ecological Modernization in Rentier States. *Energy Policy* 38 (5): 2395–2403.
- Riddel, Mary. 2003. Candidate ECO-labeling and senate campaign contributions. *Journal of Environmental Economics and Management* 45 (2): 177–194.
- Rieff, David. 1999. The False Dawn of Civil Society. *Nation* 268 (7): 11–16.
- Ringquist, Evan J., and Tatiana Kostadinova. 2005. Assessing the Effectiveness of International Environmental Agreements: The Case of the 1985 Helsinki Protocol. *American Journal of Political Science* 49 (1): 86–102.
- Risse-Kappen, Thomas. 1994. Ideas Do Not Float Freely: Transnational Coalitions, Domestic Structures, and the End of the Cold War. *International Organization* 48 (2): 185–214.
- Risse-Kappen, Thomas. 1995. *Bringing Transnational Relations Back In*. Cambridge: Cambridge University Press.
- Roberts, Timmons J., Bradley C. Parks, and Alexis A. Vásquez. 2004. Who Ratifies Environmental Treaties and Why? Institutionalism, Structuralism and Participation by 192 Nations in 22 Treaties. *Global Environmental Politics* 4 (3): 22–64.
- Rootes, Chris. 1999. Acting Globally, Thinking Locally? Prospects for a Global Environmental Movement. *Environmental Politics* 8 (1): 290–310.
- Rubin, Donald B., and Neil D. Thomas. 1996. Matching Using Estimated Propensity Scores: Relating Theory to Practice. *Biometrics* 52 (1): 149–264.
- Russett, Bruce M., and John D. Sullivan. 1971. Collective Goods and International Organizations. *International Organization* 25 (4): 845–865.

- Salamon, Lester M., and Helmut K. Anheiner. 1991. *Toward an Understanding of the International Non-Profit Sector – Project Outline*. Baltimore, MD: Johns Hopkins University.
- Sarewitz, Daniel. 2004. How Science Makes Environmental Controversies Worse. *Environmental Science and Policy* 7 (5): 385–403.
- Schelling, Thomas C. 1992. Some Economics of Global Warming. *American Economic Review* 82 (1): 1–14.
- Scholte, Jan A. 2004. Civil Society and Democratically Accountable Global Governance. *Government and Opposition* 39 (2): 211–233.
- Sekhon, Jasjeet S. 2007. Multivariate and Propensity Score Matching Software with Automated Balance Optimization: The Matching Package for R. *Journal of Statistical Software* 42 (7): 1–52.
- Seleden, Thomas, and Daqing Song. 1994. Environmental Quality and Development: Is there a Kuznets Curve for Air Pollution Emissions? *Journal of Environmental Economics and Management* 27 (2): 147–162.
- Sell, Susan K., and Aseem Prakash. 2004. Using Ideas Strategically: The Contest between Business and NGO Networks in Intellectual Property Rights. *International Studies Quarterly* 48 (1): 143–175.
- Simmons, Beth A., and Zachary Elkins. 2004. The Globalization of Liberalization: Policy Diffusion in the International Economy. *American Political Science Review* 98 (1): 171–189.
- Singer, David. 1988. Reconstructing the Correlates of War Dataset on Material Capabilities of States, 1816–1985. *International Interactions* 14 (2): 115–132.
- Skodvin, Tora, and Steinar Andresen. 2008. Non-State Influence in the International Whaling Commission, 1970–2006. In: Michelle M. Betsill and Elisabeth E. Corell (eds). *NGO Diplomacy: The Influence of Non-Governmental Organizations in International Environmental Negotiations*. Cambridge, MA: MIT Press (pp. 119–148).
- Skolnikoff, Eugene B. 1990. The Policy Gridlock on Global Warming. *Foreign Policy* 79 (3): 77–93.

- Slantchev, Branislav L. 2006. Politicians, the Media, and Domestic Audience Costs. *International Studies Quarterly* 50 (3): 445–477.
- Slikker, Marco, and Anne van den Nouweland. 2001. *Social and Economic Networks in Cooperative Game Theory*. Dordrecht: Kluwer.
- Sloof, Randolph. 1998. *Game-Theoretic Models of the Political Influence of Interest Groups*. Boston, MA: Kluwer Academic.
- Smith, Richard A. 1995. Interest Group Influence in the U.S. Congress. *Legislative Studies Quarterly* 20 (1): 89–139.
- Snidal, Duncan J. 1994. The Politics of Scope: Endogenous Actors, Heterogeneity, and Institutions. *Journal of Theoretical Politics* 6 (4): 449–472.
- Spilker, Gabriele. 2012. Helpful Organizations: Membership in Inter-Governmental Organizations and Environmental Quality in Developing Countries. *British Journal of Political Science* 42(2): 345–370.
- Sprinz, Detlef F., and Tapani Vaahtoranta. 1994. The Interest-Based Explanation of International Environmental Policy. *International Organization* 48 (1): 77–105.
- Srinivasan, U. Thara. 2010. Economics of Climate Change: Risk and Responsibility by World Region. *Climate Policy* 10 (3): 298–316.
- Stasavage, David. 2004. Open-Door or Closed Door? Transparency in Domestic and International Bargaining. *International Organization* 58 (4): 667–703.
- Steffek, Jens, and Maria Paola Ferretti. 2009. Accountability or Good Decisions? The Competing Goals of Civil Society Participation in International Governance. *Global Society* 23 (1): 37–57.
- Steffek, Jens, and Patrizia Nanz. 2007. Emerging Patterns of Civil Society Participation in Global and European Governance. In: Jens Steffek, Claudia Kissling, and Patrizia Nanz (eds). *Civil Society Participation in European and Global Governance: A Cure for the Democratic Deficit?* New York: Palgrave Macmillan (pp. 1–29).

- Stroup, Sarah S., and Amanda Murdie. 2013. There's No Place Like Home: Explaining International NGO Advocacy. *Review of International Organizations*: In Press.
- The World Conservation Union (IUCN). 1973–2006. *IUCN Membership Relations and Governance – Membership List*. Gland: IUCN.
- Thomann, Lars. 2007. The ILO, Tripartism, and NGOs: Do Too Many Cooks Really Spoil the Broth? In: Jens Steffek, Claudia Kissling, and Patrizia Nanz (eds). *Civil Society Participation in European and Global Governance: A Cure for the Democratic Deficit?* New York: Palgrave Macmillan (pp. 71–94).
- Torfason, Magnus Thor, and Paul Ingram. 2010. The Global Rise of Democracy: A Network Account. *American Sociological Review* 75 (3): 355–77.
- Ulph, Alistair. 1997. International Trade and the Environment: A Survey of Recent Economic Analysis. In: Henk Folmer and Tom Tietenberg (eds). *International Yearbook of Environmental and Resource Economics 1997/98*. Cheltenham: Edward Elgar (pp. 205–242).
- Vabulas, Felicity. 2011. *When and Why Do Intergovernmental Organizations Grant Formal Access to NGOs?* University of Chicago, IL: Typescript.
- Victor, David G. 2006. Toward Effective International Cooperation on Climate Change: Numbers, Interests, and Institutions. *Global Environmental Politics* 6 (3): 90–103.
- Victor, David G., Kal Raustiala, and Eugene B. Skolnikoff (eds). 1998. *The Implementation and Effectiveness of International Environmental Commitments*. Cambridge, MA: MIT Press.
- von Stein, Jana. 2008. The International Law and Politics of Climate Change. *Journal of Conflict Resolution* 52 (2): 243–268.
- Wapner, Paul. 1995. Politics beyond the State: Environmental Activism and World Civic Politics. *World Politics* 47 (3): 311–340.
- Wapner, Paul. 1996. *Environmental Activism and World Civic Politics*. Albany, NY: State University of New York Press.
- Ward, Hugh, and Xun Cao. 2012. Domestic and International Influences on Green Taxation. *Comparative Political Studies*: In Press.

- Ward, Hugh. 2006. International Linkages and Environmental Sustainability: The Effectiveness of the Regime Network. *Journal of Peace Research* 43 (2): 149–166.
- Ward, Hugh. 2008. Liberal Democracy and Sustainability. *Environmental Politics* 17 (3): 386–409.
- Ward, Michael D., Brian D. Greenhill, and Kristin M. Bakke. 2010. The Perils of Policy by P-Value: Predicting Civil Conflicts. *Journal of Peace Research* 47 (4): 363–375.
- Ward, Michael D., Katherine Stovel, and Audrey Sacks. 2011. Network Analysis and Political Science. *Annual Review of Political Science* 14 (1): 245–264.
- Wasserman, Stanley, and Katherine Faust. 1997. *Social Network Analysis: Methods and Applications*. Cambridge: Cambridge University Press.
- Weiss, Thomas G., and Leon Gordenker. 1996. *NGOs, the UN and Global Governance*. Boulder, CO: Lynne Rienner.
- Wettestad, Jørgen. 2002. *Clearing the Air*. London, Ashgate.
- White, Gordan. 1994. Civil Society, Democratization, and Development: Clearing the Analytical Ground. *Democratization* 1 (3): 375–390.
- Wiser, Glenn. 1999. *Compliance Systems under Multilateral Agreements. A Survey for the Benefit of Kyoto Protocol Policymakers (CC99–2)*. Washington, DC: The Center for International Environmental Law.
- Yamin, Farhana, and Joanna Depledge. 2004. *The International Climate Change Regime – A Guide to Rules, Institutions, and Procedures*. Cambridge: Cambridge University Press.
- Yamin, Farhana. 2001. NGOs and International Environmental Law: A Critical Evaluation of their Roles and Responsibilities. *Review of European Community and International Environmental Law* 10 (2): 149–162.
- Young, Oran R. (ed). 1999. *The Effectiveness of International Environmental Regimes: Causal Connections and Behavioral Mechanisms*. Cambridge, MA: MIT Press.
- Young, Oran R. 2001. Inferences and Indices: Evaluating the Effectiveness of International Environmental Regimes. *Global Environmental Politics* 1 (1): 99–121.

- Young, Oran R. 2003. Determining Regime Effectiveness: A Commentary on the Oslo–Potsdam Solution. *Global Environmental Politics* 3 (3): 97–104.
- Young, Oran R., and Michael Zürn. 2006. The International Regimes Database: Designing and Using a Sophisticated Tool for Institutional Analysis. *Global Environmental Politics* 6 (3): 121–143.
- Zilbauer, Matthias. 2005. *Determinants of International Environmental Cooperation. Does ENGO Strength Foster a Country's International Environmental Commitment?* University of Konstanz: Unpublished Manuscript.
- Zürn, Michael. 1998. The Rise of International Environmental Politics: A Review of Current Research. *World Politics* 50 (4): 617–649.